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THE
DUBLIN JOURNAL
OF
MEDICAL SCIENCE

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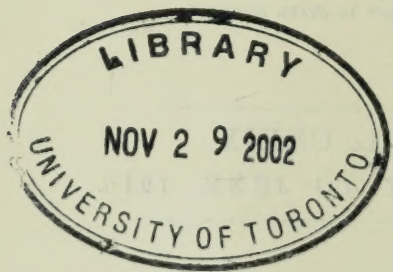
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MEDICAL SCIENCE.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*The Physiology of the Pylorus.*^a By W. H. THOMPSON, M.D., F.R.C.S. Eng., Sc.D.; King's Professor of the Institutes of Medicine in the School of Physic, in Ireland, Trinity College, Dublin.

WHEN I look round and see many of my colleagues who have occupied the chair of this Society, and when I look down the list of its Past Presidents and see there such names as those of Cunningham and MacAlister and others, I feel that you have conferred a great honour, and at the same time placed a great responsibility upon me, in electing me to the Presidency of the Society for the year now beginning. Gentlemen, I thank you for the honour, and I ask you all to assist me in an endeavour to make the year worthy of the traditions of the Society.

The work of the Biological Association is of inestimable value in the education of the medical student. It teaches him to think for himself, and brings out whatever of originality he may possess. These are points of no mean importance, especially as correctives to a curriculum which, whatever its value (and I do not wish to underrate it), tends

^a The Presidential Address delivered to the Dublin University Biological Association on Saturday, November 20, 1909.

at all events to produce a uniform pattern, not infrequently at the expense of originality.

I almost feel that I owe you an apology for the subject upon which I have chosen to address you—namely, the Physiology of the Pylorus. It is not a high flown subject, but I have selected it mainly for the reason that it has important practical bearings.

We are honoured by the presence of two distinguished guests who have come from a distance to speak on the subject—Professor Halliburton, F.R.S., and Mr. A. B. Mitchell, of Belfast. Professor Halliburton needs no introduction to you. His name is a household word where medical students abound. Mr. Mitchell's fame is also widely spread beyond the immediate sphere of his labours. You are well aware, as we all are, that he is eminently qualified to speak to the Address from the practical side.

In very olden times the stomach was regarded as a receptacle for the concoction of food, which was there altered by the warmth and moisture of the body, aided by the vital spirits. This view prevailed for some hundreds of years till Galen, in the early part of the Christian era, assigned to the organ four faculties. These were—first, a *Facultas attratrix* by virtue of which food was drawn into the stomach from the mouth; second, a *Facultas retentrix* by virtue of which the food was uniformly compressed and any surrounding space in the cavity obliterated; third, a *Facultas alteratrix* to which was attributed the changes produced in the food; and fourthly, a *Facultas expultrix* which consisted in a tight closure of the stomach upon its contents with simultaneous opening of one or other of the orifices. To these agencies were added the warmth contributed by neighbouring organs which were supposed to surround the stomach, as a fire surrounds a large kettle, the liver being particularly important in this respect. Hence it was laid down that one should not lie on the right side till digestion was completed for fear of damping the fire. In this matter the cardiac orifice was also made to assist by being kept shut to prevent the escape of the steam or vapours generated within, on the same principle that one covers a pot

when it is desired to bring it quickly to the boil. In the weak and hungry, however, the cardiac orifice remained open, also in the drunkard, thereby accounting in the latter case for much that, even in those remote times, was familiar to the nostril.

After being altered by the above means, the food was expelled from the stomach either upwards or downwards, the direction being purely dependent on which orifice was opened. In deciding this important point the pylorus played the chief part. Indeed, a personality was actually supposed to be concerned with the performance of this function, and the name of "pylorus" signifies the guard or keeper of the entrance—the janitor or porter. For instance, Galen looked upon the pylorus as a regulator or governor of the entrance to the intestine, having sovereign authority and monarchical power over all the other structures of the stomach. This governor was endowed with the faculty of judgment and decision, by virtue of which he opened the portal only when he himself considered best. He did so at the end of digestion, not because he was urged thereto by the chyme, but because he had a knowledge of the events happening in the stomach. On the other hand, the pylorus closed the orifice and set up vomiting when he considered it would be injurious to the health to allow the stomach contents to pass further into the system.

Under certain circumstances the pylorus might be weakened or overcome, and the orifice opened too wide. This particularly occurred in young people given to late revelling and free drinking. In such state the contents of the stomach passed unchecked to the kidneys, thus accounting for the continuous micturition associated with these conditions.

These views, though long given up by the majority of physiologists, were reflected in the writings of French authors down to nearly the middle of the nineteenth century. For instance, the pyloric orifice is said by Richerand (1844) to be endowed with a special sensibility, and to have a delicate touch, which enables it to exercise a species of choice in respect to the foods which pass through it.

Accurate knowledge concerning the functions of this part of

the stomach accumulated very slowly. It was known to Willis (1675) that the food did not escape from the organ continuously, but in small portions as it was digested. About the same period an observation of great importance was also first made—namely, that under certain circumstances a circular constriction occurs in the stomach at some distance from the pylorus. This was first noticed by a man named Wepfer in experiments on wolves, dogs, and cats, and was also confirmed soon afterwards by other observers. The position of the constriction was not precisely defined. It was stated, however, to occur not exactly in the middle of the stomach, but more towards the pyloric end. The movements of the stomach were also carefully observed by Peyer, and later by Haller. They were said to consist of alternate contractions and relaxations similar to, but of much slower rhythm than, the movements seen in the intestine. The knowledge that fluids escape through the pylorus much earlier than solids dates likewise from this period.

Little advance was made from this point for nearly a hundred years. The greater part of the eighteenth century and first quarter of the nineteenth were almost fruitless. Then came the observations of Beaumont on the stomach of St. Martin, but these, though interesting in many respects, were on the whole disappointing. Modern physiology was only in its infancy at the time. Even the anatomy of the stomach was not sufficiently known to enable Beaumont to take full advantage of his unique opportunity.

Our present knowledge of the muscular functions of the stomach is mainly based on two sets of investigations—one carried out in 1886 by Hofmeister and Schutz on the excised stomach of the dog kept in warm saline; the other by Cannon in 1898, on the stomach of the cat fed with bismuth meals and examined by Röntgen rays. The latter observations, more than any others, called attention to the muscular activity of the pyloric end, and to the fact that the stomach is functionally divided into two regions. Within five minutes after the administration of a meal, Cannon saw constrictions beginning near the middle of the stomach, which moved slowly as waves

to the pylorus, the indentations deepening and the contractions strengthening as the waves progressed. These waves propelled food towards the pylorus, and followed each other regularly at the rate of six per minute in the cat, often running for over seven consecutive hours, as many as 2,600 being concerned with the expulsion of a single meal. At intervals during the progress of the waves the pylorus was observed to open, sometimes to every wave, oftener to every third or fourth, to allow food to be injected into the duodenum. Previous investigators, as already stated, had noted by means of fistulæ that digested food escaped from the stomach in small gushes. These observations of Cannon have been confirmed by others and have also in some respects been extended to the human subject.

My chief wish now is to call your attention to the factors which regulate this rhythmic opening and closure of the pylorus.

From the outset it was apparent that the sphincter was kept tonically closed for the most part, but relaxing periodically to allow liquefied food to enter the bowel. The factors, however, which maintained this closure, and which determined the periodical relaxation, were wholly obscure. Time will not permit me to deal in chronological order with the discoveries which have thrown light upon these questions. I shall have to content myself with a somewhat bare statement of the facts, and then deal with the explanations offered to account for them.

In examining the passage of different foods out of the stomach it soon became clear that all do not escape at the same rate. Thus carbohydrates begin to escape in ten or fifteen minutes after being fed, their discharge is rapid, and the stomach is empty in three hours. Proteins, on the other hand, do not begin to escape for over half an hour; very little has left at the end of an hour, and the stomach is not empty for six hours. Fat, when liquid, often begins to escape soon, but under ordinary conditions none leaves for over half an hour, then the escape is very slow, and at the end of six hours in many of Cannon's experiments not more than half of the meal had left the stomach.

From these and other kindred facts it would almost seem that the activity of the pylorus is influenced by the nature of the liquefied food which reaches it. This claim is indeed made by more than one physiologist, but before admitting it we should consider another possible explanation—namely, that the order in which the above foods pass through the orifice is that in which they are digested and admitted to the pyloric vestibule or antrum.

The existence of a constricting band marking a division between the body of the stomach and the pyloric portion was known, as already stated, from a very early period. That this band can play the part of a sphincter capable of completely separating the two regions of the stomach from each other must, I think, now be admitted, at all events for certain animals. To this sphincter the name pre-antral has been given. A great deal of evidence has accumulated to prove this, but I shall refer to only two observations. The first of these was made in Pavlov's laboratory by means of fistulæ, one leading into the body of the stomach, the other into the pyloric portion. It was found that food passed into the latter from the former by rhythmic jets dependent on the action of a sphincter capable of completely separating the two regions from each other. During its maximal contraction not a single drop of liquid was allowed to pass through from one side to the other. The second is even more striking, and consists of a fact observed by Magnus when studying the cause of the constipating of the effects of morphin.

Cats in which diarrhœa had been evoked, were fed with bismuth meals and morphin injected. On subsequent examination by Röntgen rays and the fluorescent screen the stomach was seen to be completely divided into two parts and the food prevented from entering the pyloric portion. This phenomenon could be accounted for only by a firm closure of the pre-antral sphincter.

Accepting the existence and activity of this sphincter it is only necessary to assume that under ordinary circumstances its contraction brings the longitudinal folds of lining membrane of the stomach sufficiently into contact to keep

back solids, while liquids are allowed to trickle through, along the furrows between the folds. This view I have held for some time and given expression to in writing. Recently it has been confirmed on reading a paper by Waldeyer, kindly brought to my notice by Dr. H. M. Johnston, in which the author speaks of these grooves as the streets of the stomach.

Whether the foregoing suggestion ultimately prove accurate or not, it is at all events beyond doubt that the action of the pylorus is influenced from the intestinal side. The first observation pointing to this was made by Hirsch in a duodenal fistula in a dog. He found that if the fluid escaping by jets from the stomach were collected and reintroduced into the intestine the rate of escape was rendered much slower. At the outset he surmised that the acid fluid determined in some way the slower escape, but an observation made about the same time by von Mering—namely, that milk had a similar effect—led him to think that mechanical distension of the bowel was the factor which produced the effect. It was not till some years later that Pavlov, by carefully planned experiments, definitely proved that the escaping contents excited a reflex closure of the sphincter of the pylorus by virtue of the acid derived from the gastric juice. This acid acted on the duodenal mucous membrane, and so long as it remained un-neutralised this closure was tightly maintained. As soon as neutralisation occurred, relaxation was again possible and further contents allowed to escape.

Two other conditions have since been proved to exercise an influence from the duodenal side. One is the mechanical factor produced by distension of the bowel. Thus the inflation of a small rubber balloon, introduced into the duodenum through a fistula, checks the rhythmic discharge of contents through the pylorus. This action can rarely, if ever, come into play in normal conditions, but there can be no doubt that it exists as a reserve force, which would enable the intestine to protect itself against over-filling. One of the most striking facts about the physiology of the small bowel is that the tube is always relatively empty, being practically collapsed, and never found in anything like a distended condition. It is, I

think, very probable that this protective re-action of the bowel comes into play in cases of gastroenterostomy, and may even be developed into a highly sensitive regulatory mechanism.

The other factor acting on the sphincter pylori from the bowel side, is also a chemical one produced by fat. It was first observed, but misinterpreted, by von Mering in the case of milk, and later by Marbaix, both for milk and other fatty foods, such as yolk of egg. It was reserved, however, for Pavlov's school to show that the reflex closure produced by these substances is due to the contact of neutral fat with the duodenal mucous membrane, the closure giving way only when the fat is converted into soap or moved on to lower parts of the bowel.

In previously offering a possible reason for the different rates at which ordinary foods pass through the pylorus, I am well aware that the explanation only accounts for the appearance of these foods in a definite order before the closed portal, and does not touch the deeper question as to why the portal opens to let them through. This problem has, however, not been overlooked by investigators, and while it is recognised that the *closure* of the sphincter is determined from the duodenal side, it is also thought probable that its relaxation or *opening* is effected from the gastric side. Amongst the conditions assigned to explain this opening is the consistence of the food. Thus, in the earlier stages of digestion, only liquids enter the pyloric canal, and these are rapidly passed into the bowel. At a later stage of digestion solid particles are allowed to pass in, but these on arrival at the pylorus excite a firm closure of the sphincter, whereby the current of fluid conveying them is so suddenly arrested that a strong back wash is set up which often carries the particles again into the body of the stomach.

Another and ingenious explanation recently given by Cannon is as follows:—It is known that a local stimulus applied anywhere to the intestinal mucous membrane evokes a relaxation of the muscular wall of the canal in front of the point stimulated, but excites a contraction of the tube behind

that point. Cannon suggests that this law applies to the opening and closure of the pylorus, the stimulus being the acid secreted in the stomach. When this reaches a certain strength in the pyloric canal the orifice in front is opened or relaxed, whereas when it passes through, the same stimulus excites a contraction behind.

The evidence upon which Cannon bases his theory is somewhat as follows:—Carbohydrate foods escape earlier than proteins for the reason that the latter combine and mask a large amount of the hydrochloric acid of the stomach, while the former do not. If the acidification of carbohydrates be delayed by mixing them with sodium carbonate, their exit is also delayed, whereas on the other hand, if the protein be previously mixed with acid, its escape is hastened. The evidence, however, is not wholly convincing. The facts may be explained in other ways, and it must be admitted that we are still very much in the dark as to the immediate cause which determines the opening of the orifice from the stomach side.

I would now like to call your attention to the important protective value of the pyloric reflex for the safe performance of the functions of the bowel. This has been shown in a series of most interesting investigations made by Cannon and Murphy on the movements of the stomach and intestines in some surgical conditions. The mode of experimentation consisted in observing in cats the rate of passage out of the stomach of a standard meal of mashed potato mixed with bismuth. This was graphically represented by plotting out a curve showing the aggregate lengths of food column present in the small intestine at regular intervals during a period of seven hours after the meal was taken. On subsequent days animals were submitted to different procedures, and the effect on the escape of a similar meal was observed. At the outset the influence of ether administered for half an hour was recorded (Fig. 1).

The most marked alteration produced by ether in the passage of food from the stomach is the slowing of the rate of discharge. The curve rises gently instead of abruptly. There

is also a slow passage through the small intestine. The food, which ordinarily reaches the large intestine at the end of two or three hours, first appeared there after four, five, or six hours. Inhalation of ether does not therefore arrest the active movements of the alimentary canal, but simply slows them. Secondly, the effect of a thirty minutes exposure of the bowel to the air was observed, such as might occur in an operation,

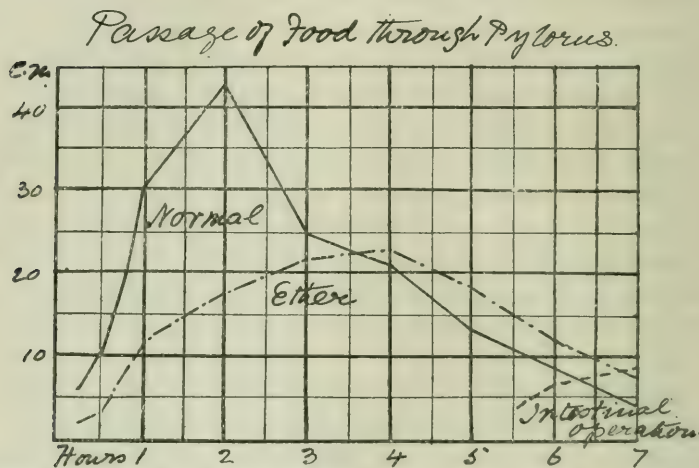


FIG. 1.—Showing the effects of ether and of an intestinal operation on the passage of food out of the stomach and through the intestine.—(Cannon.)

care being taken not to touch the viscera. At the end of this period the abdomen was closed, and after recovery from the anæsthetic a standard potato meal was given. After exposure to air the discharge from the stomach begins at the normal time, but the outgo is slow, though not so slow as in the case of etherisation alone. No food entered the large intestine until the end of six hours (Fig. 2).

In the next observation the intestines after exposure were cooled, the animal being anæsthetised with ether. The cooling was effected by pouring at intervals into the abdomen sterile salt solution at a temperature of twenty degrees centigrade.

In the curve showing the effect of cooling, the discharge, though it begins at the normal time, is somewhat slow. The

striking feature of the curve, however, is the rapid passage through the small intestine. Food appeared in the large intestine at the end of three hours, and one hour later almost the whole meal had reached the colon.

Next the effect of handling the bowel was studied, the handling varying from gentle to severe, and being accomplished sometimes in air, sometimes under warm normal saline.

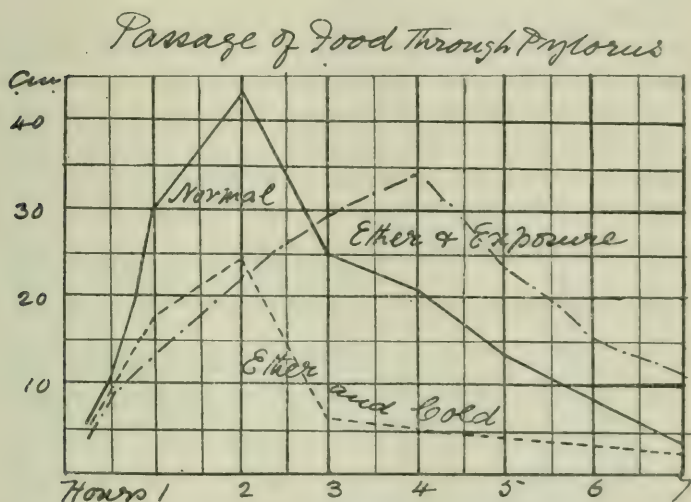


FIG. 2.—Showing the further effects of exposure and of cold on the passage of food through the stomach and intestine.—(Cannon.)

The effect of handling is very remarkable; even the most gentle manipulation under warm salts solution arrested all movement of the stomach and intestine for fully three hours after feeding (Fig. 3). Moreover, the escape when it began was very slow, and became increasingly so with the severity of the manipulation. The appearance of food in the large intestine was also delayed, none arriving there before the end of seven hours. Manipulation of the stomach and intestines in these experiments produced even under the most gentle and favourable circumstances a far greater degree of inactivity than any of the other factors concerned in the performance of the operation, exclusive of the influence of the operation itself.

Lastly, the effect of the section of bowel was investigated, the two ends being reunited immediately after the division. For comparison, two operations were performed—one a high trans-section, the other a low one, near the end of the ileum.

After a high intestinal section food did not emerge from the stomach before five or six hours, and within the period of observation extremely little had passed out (Fig 1). This

Passage of Food Through Pylorus.

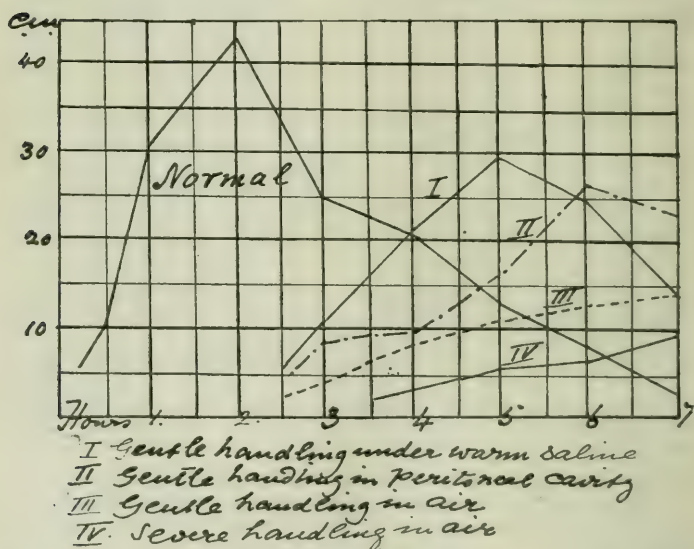


FIG. 3.—Showing the effects of handling the bowel on the passage of food through the stomach and intestine.—(Cannon.)

remarkable delay was not due to arrest of the normal peristaltic waves which expelled food from the stomach. These contractions were seen pushing food up to the pylorus at the rate of five or six a minute for more than five hours, but the sphincter held perfectly tight against the pressure, and refused to permit food to pass into the injured gut. It is remarkable, as Cannon and Murphy have pointed out, that the period during which this protection is exercised, corresponds closely with the time required for the primary cementing of the wounds

of the intestine as determined by independent observers. From experiments made by Dr. Abbey on the healing of intestinal sutures in dogs, sheep, and other animals, the usual time required for the exudation of a firm gluey lymph, able to afford efficient support to the wounded parts, is usually about six hours.

In the intestinal section at the lower end of the small bowel food escaped from the stomach within two hours, but food accumulated in the upper part of the small intestine, and even at the end of seven hours none had reached the lower end of the small intestine, although under normal circumstances the same meal appeared in the colon before three hours. It would seem therefore that not only is a protective influence exerted through the sphincter pylori, but that injury at any part of the alimentary canal is able to produce a blocking effect which saves the damaged part until a certain amount of repair has taken place.

ART. II.—*Concerning Trachoma.*^a By ARTHUR H. BENSON, M.B., F.R.C.S.I.: Surgeon to the Royal Victoria Eye and Ear Hospital, Dublin.

My first duty is to thank you for the honour you have done me in electing me President of this Section, and I do so with all sincerity. My next duty is to thank Professor White, on behalf of the Section, for his long and faithful services as secretary, and to greet his successor, Dr. Boxwell.

It is a very usual thing, in opening a new session, for the President to review the work done during the previous session; but in the present case such a recapitulation would seem to me to be profitless. I prefer, rather, to call your attention to one subject of the first importance to all humanity, and to the inhabitants of this country in particular, in the hope that by your efforts a serious blank in our knowledge may be filled.

^a Presidential Address delivered at the Opening Meeting of the Pathological Section of the Royal Academy of Medicine in Ireland, on Friday, November 12, 1909

Trachoma, or granular ophthalmia, is one of the greatest curses that weigh down and oppress the poor in this distressful country. It is the plague of all our work-houses, industrial schools, and eye hospitals. It is the "opprobrium ophthalmicum"; for though, like the poor, whom it principally attacks, it is always with us, yet we have no certain knowledge as to its true nature or its ultimate cause.

I trust that some of those members of the Section who have energy, and enterprise, and time, and opportunity, will undertake original investigations into the essential cause of the condition which, year by year, is responsible for the blinding of thousands and the partial incapacitating of tens of thousands of our fellow-countrymen.

Whoever discovers the actual essential cause of trachoma will thereby erect for himself a monument more lasting than brass, and will have earned the gratitude, not only of a nation, but of the whole world.

Much has already been done to prepare the way. A few years ago every form of conjunctivitis was described and catalogued solely in accordance with its clinical appearances and characteristics. Now most of these forms are identified bacteriologically, and their specific cause is known with certainty.

Acute catarrhal conjunctivitis is known to be caused by the slender bacillus of Koch and Weeks. The Morax-Axenfeld diplo-bacillus produces a characteristic form of blepharo-conjunctivitis. The pneumococcus produces a less characteristic form of conjunctivitis, with pinkish œdema of lid margins, and often rapid subsidence of the symptoms, reminding one of the "crisis" in acute pneumonia. Löffler's diphtheria bacillus produces its characteristic membranous conjunctivitis. The gonococcus is responsible for gonorrhœal ophthalmia, and many cases of ophthalmia neonatorum. The streptococcus, bacterium coli, and tubercle bacillus each produces forms of conjunctivitis that are definite clinical entities, and as the cause is recognisable, so the line of treatment emerges

from the twilight of empiricism into the full day of scientific certainty. But trachoma, which draws its victims from all periods of life, and with bulldog tenacity holds them in its grip, as yet owns to no specific cause, yields to no specific toxin. We still treat it much as it was treated fifty years ago (or, for the matter of that, two thousand years ago), and with a most humiliating want of success. All the evidence points to its being micro-organic in origin, but the special causative germ—this “Scarlet Pimpernel” of bacteriology—still eludes the vigilant search of microscopes in every land.

Every few years our hopes are raised by the publication of a full description of the “notorious criminal,” with portraits of his development, from youth to age, but, so far, in every case he has been able to prove an *alibi*, and has left the court without a stain upon his character.

Just at present the trial of the most recent “suspect” is in full swing. Through the kindness of Dr. Mooney, I am enabled to show you not only his portrait, but the individual himself under one of the microscopes. The so-called “Trachoma corpuscle”^a of Greeff. Professor Greeff sent him to Sir Henry Swanzy, who lent him to Dr. Mooney, who brought him here for us to see.

Later on we shall have more to say on the subject.

Trachoma is known in practically all countries. It is a scourge in many, and its presence has been recognised from the remotest ages, but it was the devastating epidemics of the latter years of the eighteenth century, and the beginning of the nineteenth, that first riveted upon it the attention of the medical profession in Europe.

In 1798 Napoleon landed an army of 32,000 men in Egypt. A very large number of these were attacked by a violent inflammation of the conjunctiva, to which the name “Egyptian ophthalmia” was applied. On their

^a Provazek calls them “Clamidozoa” (Manteltiere, *i.e.*, organisms with mantels). Many writers call them “Provazek bodies.”

return to Europe they brought the disease with them, and in the period of the Napoleonic wars, when all the armies of Europe were repeatedly in contact, the disease spread with such appalling rapidity that a few years later we find it epidemic in every army in Europe. In the English army, during the year 1818, there were more than 5,000 men on the invalid list, blind from trachoma. In the Prussian army, from 1813 to 1817, over 20,000 men were attacked with this disease. In the Russian army, from 1816 to 1838, 76,811 men were suffering from trachoma. In Belgium, in 1840, one out of every five soldiers was afflicted with trachoma.

These soldiers, invalided home, carried the disease to their families, and spread it through every quarter of their country. Hence trachoma became epidemic in almost every state of Europe. At this stage it became usual to describe it as "military ophthalmia."

Among the civil population trachoma finds a soil suitable for its development wherever many persons are crowded together with imperfect hygienic surroundings. Hence, when in 1841 workhouses became established in Ireland, they formed excellent culture beds and disseminating depôts for the disease, and, in spite of the improved hygienic arrangements, trachoma still flourishes in every union workhouse throughout the land.

It is a remarkable thing that whereas trachoma is a national calamity in Ireland, it is an extremely rare disease in England, and would most assuredly become extinct there but for the influx of infected aliens.

England, as has been said, is a trachoma filter-bed for the United States, and Ireland suffers in the same manner, but the better hygienic conditions prevailing in England have saved it from our fate.

Trachoma is a disease venerable by its antiquity. It is believed to be the disease alluded to in the oldest book on medicine that is known, the Ebers Papyrus, written in Egypt about three thousand four hundred years ago—*i.e.*, about a thousand years before Hippocrates. Celsus

describes the disease, not by name, but in indisputable language. It was well-known among both the ancient Greeks and Romans, as Boldt mentions in his exhaustive work on "Trachoma" (from which, as also from Fuchs and Axenfeld, I have borrowed freely).

It is alluded to in the comedies of Aristophanes, and in a certain Greek play those desirous of avoiding service as marines are represented as pleading ophthalmia as an excuse.

How modern these old Greeks were!

It is stated that Meshullam ben Menachem, in 1481, and Obaja, in 1488, are the first to mention that eye disease was then, as it is still, almost universal in Egypt: but how long before this the disease had become pandemic it is difficult to say.

Trachoma, with us, shows itself under two rather different aspects:—

(1) *Papillary trachoma*, characterised by an increase in size of the surface of the hypertrophic conjunctiva, so that it is thrown into folds with deep clefts between: the connective tissue forming the papilla is stuffed full of round cells; and

(2) *Follicular trachoma*, characterised by the presence of the true trachoma bodies, which are rounded accumulations of cells, between which a very delicate connective tissue framework can be made out. The cells in the marginal portions of the granulations are lymphocytes: in its anterior parts are predominantly uninuclear leucocytes (epithelioid cells), between which lie a few particularly large cells (phagocytes), which contain in their protoplasm small, deeply-staining corpuscles (Fuchs).

There are certain points which may be worth bearing in mind by anyone about to undertake an investigation into the cause, the intimate specific cause, of trachoma. Amongst the lower animals monkeys are said to be the only ones affected with trachoma. The conjunctiva and lacrimal sac are the only mucous surfaces affected with the trachomatous type of inflammation.

Trachoma cases are nearly always complicated by the presence of some one or more of the well-known pathogenic organisms, which must be regarded as a complication, and not the cause of the condition, a mixed infection being almost the rule, the most important complicating organisms being the Koch-Weeks bacillus and the gonococcus.

The history of the earlier epidemics, and the frequent presence of the gonococcus, has led some to hold that trachoma arose originally from the action of the gonococcus. Indeed, so lately as 1905, Bishop Harman writes:—

“The conclusion I am driven to, after examining all the evidence at my disposal, is that, so far as microbic influences can be determined, the trachoma of our time is probably the result of an inoculation of the conjunctiva with the *Micrococcus gonorrhœæ* of an attenuated virulence, the effects of the inoculation being so mild that they are not noticed; consequently, in England we never obtain definite evidence of the organism, the case being seen too late.”

Trachoma is essentially a chronic disease. Acute trachoma is a disease which begins acutely with profuse secretion, and in the majority of cases is not a pure trachoma, but a mixed infection with an acute catarrh.

Perhaps the most perplexing fact in connection with the subject of the contagiousness of trachoma is the unilaterality which is now and then observed. I have several times found a typical trachoma of several years' standing in one eye, whilst in the other eye of the same individual no trace of disease, past or present, could be seen. No satisfactory theory has, so far, been put forward to explain this anomaly. It is impossible to suppose that direct local infection had not taken place during those years, and such explanations as “local immunity” are mere words, and do not help us.

The infectiveness of trachoma is greatly increased during the acute exacerbations caused by the presence of

other organisms, such as the Koch-Weeks bacillus and the gonococcus, the diplo-bacillus of Morax-Axenfeld, or the pneumococcus.

Simple chronic granular ophthalmia possesses but a low degree of infectiveness, but predisposes the conjunctiva to the attacks of other micro-organisms, whose activities at once raise the infectiveness of the trachoma virus. Drying of the conjunctival secretion seems entirely to destroy the infectiveness of the trachoma virus. No life period is proof against trachoma. Acquired immunity cannot be demonstrated. The influence of personal disposition cannot be denied. The influence of race predisposition is doubtful. The influence of environment is all-important.

Trachoma has never been produced by inoculation with pure cultures of any known micro-organism, though it has from time to time been stated to be caused by—

- (1) The gonococcus, as mentioned before.
- (2) The Koch-Weeks bacillus (Gromakowski).
- (3) Micro-organisms, designated "trachoma cocci," have been found by Michel, Sattler, and many others, but Axenfeld says they are not constant, and are not the cause of the condition.
- (4) Bacillus Xerosis (Shongolowicz).
- (5) "Microsporon trachomatosum," a fungus which Noiczewski thought he found.
- (6) Ultra-microscopical bodies are described by Raehlmann and Santucci, but their causative power requires proof.
- (7) L. Müller has found a small bacillus like the influenza bacillus, but it is not constant, and is not the cause of trachoma.

Everything is in favour of trachoma being a specific infectious disease, the cause of which is not yet definitely determined; but, as I mentioned before, there is now another prisoner in the dock the organism discovered almost simultaneously by Professor Greeff in Germany, and by Halberstädter and Provazek in Java, and verified

by Mijaschita in Japan, and by others in different countries.

At the Ophthalmological Congress in Oxford, in July last, and subsequently in Belfast, Professor Greeff demonstrated the organism which he regards as the cause of trachoma. He says—"The bodies I found were very regular, round, cellular inclusions, which were much smaller than the smallest known coccus. They stain intensively, sometimes violet, sometimes reddish or blue, with Giemsa, diluted with aniline stains, and not at all with Gram. They are surrounded by a distinct, clear zone. With the strongest powers of the microscope, one observes that they are not quite round, but a little oval, like bacteria with rounded extremities. Finally, they are isolated, or grouped in pairs or in masses. If intracellular they lie close to the nucleus. We found the formations in the epithelial cells, in the discharge, in the pressed-out follicles, and, indeed, everywhere they were looked for."

The bodies can also be seen in sections "in the sub-epithelial tissue, in the lymph spaces beneath it, in the cells of the follicles (the lymphoid and the so-called Leber's cells), and between the cells."

Greeff states that these bodies are a constant characteristic of trachoma, as he has found them in every recent case of trachoma (not under treatment), and, further, that he failed to find them in any other form of conjunctivitis.

Caustic applied to the conjunctiva makes them vanish for the time, but they recur. These bodies invade the cell, increase in number, and congregate in a mass close to the nucleus, multiply till they fill the cell, and finally burst free into the tissues.

"It would as yet," he says, "be premature to attempt to assign the trachoma bodies their place in the zoological system. They are certainly not bacteria; on the contrary, they are more closely allied to the protozoa." ^a

^a A cell with a mass of these in it was on view under the microscope.

In these disjointed remarks I have brought forward nothing original, I have stated nothing new. My object has been to attempt very briefly to recapitulate some of the results of the last twenty years' work on this subject, in the hope that it may serve to stimulate some of the younger men here to undertake the task of verification, and by original work to throw light upon these dark places.

Are these organisms really the cause of trachoma? That is the great question of the hour. It may be easy to demonstrate their specific nature, but their parasitic and causative nature is quite another question.

We have so often been disappointed in the past that it behoves us to accept with caution all statements, and test for ourselves the facts. At present our only verdict can be, "Not proven."

I know the subject is difficult, but if it were not difficult neither would it be interesting. I know that it is not easy to get the time and the energy to carry on any extra work, for, as the great Samuel Johnson said, "What we think of importance we wish to do well; to do anything well requires time, and what requires time commonly finds us too idle or too busy to undertake it."

Through the labours of your predecessors, as I have tried to show, many solid facts have been established; much of the mist and obscurity that surrounded the subject has been cleared away. But there is plenty of original work still to be done, for, even supposing that the organism now shown under the microscope is the long-sought microbe, that is only the first step. Its life history has to be worked out, its origin and its metamorphoses have to be investigated, and its likes and dislikes observed. Not till these have been done can any advantage be obtained from the primary discovery.

The material for such investigations is at your hand. I can give anyone who wants to work as many cases of trachoma as he wishes. Our eye hospitals are full of them, our workhouses are full of them, our blind asylums

are full of them, the whole country is full of them—there is no lack of material. Much has been done, but much remains to be done, and this is the place to do it.

In conclusion I will tell you a story.

Two mice in a pantry were foraging for food. One of them slipped into a jug of cream, and was like to drown. "Keep kicking," cried his friend on the shelf. "But I can't swim," said the one in the jug. "Never mind," said his friend on the shelf, "keep kicking, keep kicking." "What good will that do?" said the half-drowned one in the jug. "Never mind, keep kicking."

In the morning, when the pantry was opened, Mr. Mouse in the jug was found sitting comfortably up on a pat of butter! My advice to you is "Keep kicking."

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF
PHILADELPHIA.

THE College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1910, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in Medicine, but cannot have been published. They must be typewritten, and must be received by Thomas R. Neilson, M.D., the secretary of the College, on or before May 1, 1910. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

YEAR BOOKS FOR 1910.

1. *The "Wellcome" Photographic Exposure Record and Diary, 1910.*
2. *An Almanack for the Year of Our Lord, 1910.* By JOSEPH WHITAKER, F.S.A. London: 12 Warwick Lane, Paternoster Row. 1910. Cr. 8vo. Pp. 989.

1. THE "Wellcome" Photographic Exposure Record and Diary" holds an unique position amongst photographic publications. In no other book can be found such a wealth of expert, practical information on the essentials of photography in such a condensed and crystallised form—not a word is wasted. Practice is the keynote throughout the book—its size prohibits theory.

Every word of its expert articles and every figure in its numerous formulas are the results of research and actual experience. Let the photographer follow the instructions given in the article on exposure, and his exposures will be correct; let him develop those exposures according to the methods set forth, and ideal negatives will be the inevitable result.

A very important feature is the "Wellcome" Mechanical Exposure Calculator, admitted to be the simplest efficient instrument ever introduced for the purpose. It is fastened inside the back cover of the book, and cannot be lost or mislaid. It cannot get out of order, and no refills of sensitised paper or other material are required. One turn of one scale tells the correct exposure for any subject at any time of the day or year, in any part of the world.

The following brief list of subjects treated will give some idea of the scope of the book:—

How to estimate the correct exposure for any subject under

almost every conceivable condition of light, time of day and year, latitude, plate, &c., &c. Factors for plates and bromide papers, diary, memoranda, and exposure record pages, developers for all purposes, development by all methods, lantern-slide making, intensifiers and intensification, reducers and reduction, contact printing by artificial light, toners and toning ozobrome process, colours by simple development, colour effects by staining, speeds of bromide papers, besides numerous pages of general information which is especially useful to photographers. No trouble is spared to bring each edition thoroughly up to date by incorporating any fresh material gathered during the preceding year which is likely to be helpful either in the field or in the dark room. In the 1910 edition the chapters on exposure have been carefully revised, and the list of plate factors has been corrected and amplified to include the latest introductions. Several new features have been added. Amongst these may be mentioned—improved methods of obtaining wide variations in colour of sulphide-toned prints; illustrations showing extensive range of colours obtainable on lantern slides by simple development. Latest data relative to time development at different temperatures.

For the convenience of photographers in different parts of the world three editions are issued :—(1) Northern Hemisphere (bound in light green); (2) Southern Hemisphere and Tropics (bound in dark green); (3) United States of America (bound in red).

It may be obtained of all photographic dealers and book-sellers and at all railway bookstalls. The price in the British Isles is one shilling.

2. THE forty-second annual issue of Whitaker's most useful Almanac contains much new and interesting matter. In its pages will be found articles on Aerial Navigation, by Captain H. J. Coningham (page 680); the Export of British Capital, by Mr. Herbert H. Bassett, F.S.S. (page 690); a Review of Social Progress in the last Fifty Years (page 686); the Imperial Press Conference (page 692); the "Break-up of the Poor Law" (page 695); the Valuation of London (page 696); the "Children's

Charter" (page 698); and the opening up of the Southern Congo, by Mr. John Thornhill (page 702).

The taxes contemplated to be raised by the Finance Bill of 1909 are set out on pages 377 to 379; while the Budget Speech of the Chancellor of the Exchequer is summarised on page 158. The Calendar, and also the astronomical, meteorological, and other notes are as interesting as ever.

There is a slip on page 489 where the name of our lamented friend, Benjamin Mullen, whose loss by death we had to deplore in August, 1908, is given as Secretary of the Hibernian Catch Club. Omissions are few and far between, but we fail to find any statement relative to His Majesty the King's Household in Ireland. The names of the officers of the Royal Household in Scotland—medical and other—are given at page 478.

Tuberculosis a Preventable and Curable Disease. Modern Methods for the Solution of the Tuberculosis Problem. By S. ADOLPHUS KNOPF, M.D., Professor of Phthisiotherapy at the New York Post-Graduate School and Hospital. New York: Moffat, Yard & Co. 1909. 8vo. Pp. xxxii + 394. Illustrated.

DURING the past half century the progress made by Preventive Medicine and Sanitary Science has quite equalled that made in other departments of Medicine. Most epidemic diseases have been controlled, and many have been almost entirely abolished, yet the problem for the sanitarian appears to loom as large as ever. Diseases which are believed to be preventable still carry off large numbers of our people each year. Of these tuberculosis is by far the most formidable, and its prevention offers a problem, which in vastness and complexity surpasses all those vexed questions which have gone before it. There is one curious feature in which the tuberculosis problem seems to differ from others, the solution of which has seemed to be easier. Our knowledge of tuberculosis—its cause, its mode of propagation, and its treatment—appears fuller and more complete than our knowledge of almost any other of the preventable diseases. In this respect, if we compare

tuberculosis with smallpox, cholera, typhus, or the plague, the balance is decidedly in favour of tuberculosis, yet with all our knowledge we are less able to control it than the other diseases. It is in the answer to the question "Why is this?" that we believe we shall find the reason for our failure in the past and the hope for success in the future.

We believe that it is more by chance than good guidance that success has crowned our efforts in Preventive Medicine in the past. In saying this we do not wish to be understood as belittling Preventive Medicine. It has done much to check such diseases as enteric fever, typhus fever, and the invasion of these countries by epidemics of foreign diseases, such as cholera. Consider on the other hand measles, diphtheria, and scarlatina; as factors in the death-rate they may now be insignificant, yet the number of cases is not very materially reduced from what it was in former days. The reason of this we believe is that where there exists among the inhabitants of a country a high susceptibility to a disease, the number of cases of that disease will be great, though better methods of treatment may materially reduce the death-rate from it. This is well exemplified by smallpox. Before the days of vaccination the number of cases of smallpox and its mortality were terrible; with the general vaccination of the people the susceptibility to the disease was markedly decreased, and the disease practically disappeared. When, however, a community fails to protect itself by vaccination an epidemic of smallpox is almost certain to appear, and, in spite of our sanitary measures, reproduces a condition of affairs not unlike that which was so common in the eighteenth century. If this idea be correct we have failed to prevent consumption, because the large mass of the people is highly susceptible to the disease, and our hope for the future lies in producing an insusceptibility. Up to within recent years the only hope of doing this lay in making the people lead as healthy lives as possible, yet all of us can remember cases where this hope proved fallacious, and those who seemed most unlikely to prove victims were struck down with the disease. Now, there would seem to us to be good grounds for hope that by the use of tuberculin as a preventive measure

a condition of affairs, similar to what exists in the case of smallpox, may be developed in the case of tuberculosis. If this hope be realised the tuberculosis problem will be solved.

Though we thus look for a solution of the problem by methods quite different from our author, and though we believe that the methods which he advocates will not completely effect the end that he has in view, yet we believe those methods are in themselves admirable. The cheering advice to the consumptive that his disease is curable, and curable too by simple methods within the reach of all, will be helpful to many; while the reproof to those described as "phthisiophobists" may save much misery. Dr. Knopf appears to have had a large experience in actual work among consumptives, and to have made good use of his experience. His book contains many practical suggestions which will be helpful to physician and patient alike. We would especially commend to the clergy of all denominations a study of Chapter X., for in respect to hygiene we fear the Churches are often the greatest sinners. To workers in the crusade against consumption all the world over Dr. Knopf's book will be found helpful and stimulating, even though much of his advice may seem as impossible of attainment as the millennium.

T. P. C. K.

Practical Bacteriology, Blood Work and Animal Parasitology.

By E. R. STITT, A.B., Ph.G., M.D. London: H. K. Lewis.
1909. Post 8vo. Pp. xi + 294.

THIS laboratory manual, written by the instructor in bacteriology and tropical medicine to the United States Naval Medical School, presents some features of especial interest. It covers a very wide field, devoting about half its pages to bacteriology, and the rest to the study of the blood and animal parasites and their carriers. Some twenty-six pages also are given up to detailed instruction in the methods found useful in studying the bacteriology and animal parasitology of the various body fluids and organs. The means by which bacteria may be differentiated, and the instructions for the manufacture of culture media stains and apparatus, are

claimed as those which are "applicable in a physician's private laboratory," and this claim seems to be true, except that it must be remembered that British law prohibits the experiments on animals which are included. It may be noticed here that although the author includes other, and sometimes later, special culture media, he omits any mention of M'Conkey's very useful bile salt mixtures. One of the chief features of the book is the conciseness with which all the details are worked out. For instance, no alternative stains are given when one is found to be satisfactory, and again, much space is saved in the description of bacteria by the "keys" which, being prefixed to each chapter, help to differentiate the members of the various groups. This remark also applies to the section on animal parasitology, in which the medically important members of the animal kingdom are arranged in tables showing their classification and relationships. This section, which includes the blood-suckers, is written chiefly with a view to assisting workers in the tropics, where the associated diseases are of relatively greater importance, but it is also undoubtedly of value for workers at home, and serves to give a general and comprehensive view of the more important points in this great subject. The chapter on immunity gives some practical methods which introduce the student in a very useful way to the study of that extremely difficult subject, and includes work on agglutinins, hæmolysins, bacteriolysins, deviation and fixation of the complement, the opsonic index, and the preparation of vaccines.

The illustrations are many and clear; they are largely new, others being chosen from the best in standard works.

Tuberculosis: A Treatise by American Authors. Edited by ARNOLD C. KLEBS, M.D. With Three Coloured Plates and 243 Illustrations in the Text. London: D. Appleton & Co. 1909.

THE subject of tuberculosis is being done to death in this country at any rate, and in consequence one can hardly be expected to enter upon either the perusal or the reviewing of the present volume with much enthusiasm. The book, how-

ever, is rather better than the average, and we can recommend it as a reference volume in which the physician will get up-to-date information on any side of the tuberculosis problem. It is extremely practical in its nature, and not the least valuable part of it is contained in the appendices. Amongst these we find an extremely well-written leaflet for teachers, one for mothers, a lengthy one to be given to tubercular patients, and an illustrated article on devices for the prevention of tuberculosis, including amongst other articles varieties of shelters. The body of the work, which comprises about 800 pages, is devoted to a systematic study of tuberculosis, and is divided into several different parts. Professor Osler contributes a short historical introduction, which is followed by a chapter on *Ætiology and Morbid Anatomy*. The succeeding parts deal with *Frequency and Distribution of the Disease*, *Symptomatology and Diagnosis*, *Prophylaxis*, *Therapeutics*, and lastly, *Surgical Diagnosis*. Under the heading of *Treatment* an extremely good and complete account of the various tuberculins and other specific remedies is given, and details of technique in preparation and administration are fully entered into. The article on prophylaxis is most interesting, and should specially appeal to Irish medical men who are either taking part in or opposing the measures which are being adopted at home to limit the spread of consumption in all its forms.

The book is well and fully illustrated; it has a good index, an unusually good bibliography, and is well printed on exceedingly good and white paper.

The Practical Medicine Series. Comprising two Volumes on the Year's Progress in Medicine and Surgery. Under the Editorial charge of GUSTAVUS P. HEAD, M.D. Vol. VI., General Medicine. Edited by FRANK BILLINGS, M.D., and J. H. SALISBURY, M.D. Chicago: The Year-Book Publishers. 1909.

THIS is a pleasantly compiled volume of the Year-Book class. It deals with the acute infections and with the diseases of the alimentary system, a special section being devoted to each

portion of the alimentary canal, to the liver, the pancreas, and to the peritoneum. The Editor's selection of matter appears to have been made with care and much judgment, and the information contained in isolated papers published throughout the year has been welded together into readable and interesting form. Some useful illustrations of apparatus, of radiograms of the abdomen after bismuth meals, and of various pathological conditions are included. An index of authors and a subject-index facilitates reference.

The book should prove useful to practitioners who find difficulty in keeping up to date with the advances that are constantly being chronicled all over the world in a multitude of medical periodicals.

Diseases of Metabolism and Nutrition. Part VIII., Gout. By DR. H. STRAUSS, Professor Royal Charity Hospital, Berlin. Translated under the direction of BARNES FOSTER, M.D., Physician New York Hospital. Bristol : John Wright & Sons ; London : Simpkin, Marshall, Hamilton, Kent & Co. 1909.

THIS is one of the series of small, but important, monographs on disorders of metabolism which have emanated from the German school, and for which Professor von Noorden is mainly responsible. Dr. Strauss, the present author, discusses and criticises in four chapters the differentiation of gout, the pathogenesis of gout, the symptoms of uricacidæmia, and the therapy of gout, but without, in our opinion, adding much of a constructive nature to our knowledge of the subject. At the outset the author admits the difficulty of exactly defining gout, owing to the frequency with which its symptoms are obscured by concurrent maladies, such as granular kidney and arterio-sclerosis. The demonstration of excess of uric acid in the blood, the existence of a typical joint, acne rosacea, gastro-intestinal and cardiac symptoms with a neuralgic or rheumatoid condition in stout muscular individuals of irritable temper ; all these the author regards as frequently significant, and in doing so he proves the difficulty of definition.

In so far as the pathological chemistry is concerned,

he points out that the discussion must deal with two phenomena :—(1) The existence of a crystalline separation of acid sodium urate in portions of necrotic tissue ; and (2) the existence of an increased uric acid content of the blood. The existence of increased uric acid in the blood he regards as proved, but finds difficulty, like all other writers, in showing the cause of the increase. Plainly it may be due either to an increased endogenous production, or to an increased intake on the one hand, or else to diminished excretion, or to a diminished transformation into other substances, on the other hand. On the whole, Strauss favours the retention rather than the over-production theory, on the ground that so many gouty cases present nephritic symptoms, but he hesitates to pronounce a dogmatic opinion, and hereby shows his wisdom. He is equally indefinite as regards the causes which lead to uric acid precipitation in certain parts of the body. After discussing the chemical side of the question, more especially the consideration of the factors which *in vitro* lead to a precipitation of uric acid from a solution, he finally commits himself to the indefinite statement that the cause is the heaping up of certain products of metabolism in localities where there is already an abundance of uric acid.

As regards treatment, stress is laid on the importance of limiting the intake of purin-containing foods, the wisdom of washing out the body by taking small quantities of fluid frequently, and the value of physical exercise. Perhaps the most interesting point touched on is the comparative value of the acid and alkaline methods of treatment, but on this point also the writer refuses to dogmatise.

The book is interesting, is clearly and thoughtfully written in a true scientific spirit, and presents in readable form a masterly criticism of current views concerning gout.

Home for Epileptics, Maghull, near Liverpool. Twentieth Annual Report.

THIS is the Twentieth Report of the working of this pioneer epileptic colony. The annual meeting at which it was adopted was a large and influential one, and Dr. Mott, the well-known

pathologist, came down from London and delivered a most interesting little speech, in which the work of this most valuable Home was clearly described from the neurologist standpoint.

Dr. Mott said, "he thought symptomatic epilepsy was something inherent in the individual, it was born with him in a great many instances, but if the conditions were favourable that potential instability might not come out." Here we have the utility of colony treatment for epileptics set out. It is not that epileptics are generally *cured* there, but that in the system of treatment carried out in this and similarly well ordered homes for epileptics, the progressive mental deterioration of the patients is prevented or retarded, and many a one so treated is thereby prevented from drifting into the epileptic, criminal or pauper classes of the community. Herein is a fine argument and a most convincing one of the ultimate great economy which accrues to the State in the timely recognition of the claim of the young epileptics for suitable and skilled early treatment.

The report under review brings prominently forward the advantages of this early treatment. Longer periods are observed to elapse between the fits when the patients are kept occupied and drug-free amidst hygienic surroundings in a colony.

Dr. Alexander, who has done so much for this Home, and who in his capacity of Hon. Consulting Medical Officer continues to direct new and ever-advancing therapeutics, ever aiming at the discovery of new curative means, has devised an operation which he speaks hopefully of as the means of combating the disease. His son, Dr. Moore Alexander, who is working on the medical staff as bacteriologist and pathologist, has been engaged in the study of the blood in epilepsy. It is especially gratifying to find that active and useful research work is being here conducted, together with all the anxious and careful consideration of the patients' ordinary needs, recreations, and the provision of constant and profitable employment.

At the annual meeting, Dr. Rhodes, of Didsbury, made the following striking statements:—

"Was it cheaper," he remarked, "to provide colonies or prisons?"

He had inquired into the mental conditions of the persons in the prisons, and he was not only quoting his own opinion, but the opinion of many other medical men, when he declared "that from 15 to 20 per cent. of the persons in our prisons to-day were epileptic, feeble-minded, or in a state of mental deficiency."

It is abundantly clear from this report that an early recognition, if followed by skilled treatment in an epileptic colony, can materially reduce the numbers of our gaol-birds and habitual criminals. "The habit" of having fits is lessened by early treatment, and the only way in which this can be accomplished is by prolonged and systematised treatment in an epileptic colony with its employments, medical atmosphere, and hygienic surroundings.

It is much to be regretted that we do not possess in Ireland an epileptic colony. Such an institution is sorely needed. Some years ago the Countess of Meath, whose world-wide reputation as a philanthropist rests upon no greater work than the establishment of her colonies for "sane epileptics," offered a considerable sum of money to start a colony in Ireland. It is lamentable and most regrettable that her most valuable and generous offer was not accepted, and that Ireland is to-day without a colony for the large number of her epileptic children.

Surgical Diagnosis. By ALEXANDER BRYAN JOHNSON, Ph.D., M.D.; Professor of Clinical Surgery in the Columbia University Medical College; Attending Surgeon to the New York Hospital; Visiting Surgeon to the Mount Mesiah Hospital; Consulting Surgeon to St. Joseph's Hospital for Rockaway; Fellow of the American Surgical Association; Member of the New York Surgical Society. In Three Volumes. London: Appleton & Co. 1909.

In this comprehensive work the author has attempted to treat the subject of "Surgical Diagnosis" upon fairly broad lines. To make the discussion of the relation of symptoms and signs

more interesting and instructive some pathological data are included, and short histories of illustrated cases are appended. The work is the outcome of the author's practical experience acquired from an extensive clinique in no less than three large hospitals in New York during twenty-five years. It is intended chiefly for the "practitioner of general medicine," and from our perusal of the work we may say at once it will be found by him to be all the author desired it should be.

Of the two volumes to hand the first comprises some 810 pages, and the second 777. Each volume is amply illustrated; the first contains one coloured plate and 257 illustrations in the text, while the second contains three coloured plates and 253 illustrations in the text. Each section is treated in an eminently satisfactory manner. The practical experience of the author appears in every page, and we can confidently recommend the work as thoroughly sound and practical. It should find a place amongst the works consulted by every surgeon and general practitioner.

Poisoning by Arseniuretted Hydrogen or Hydrogen Arsenide : Its Properties, Sources, Relations to Scientific and Industrial Operations, Symptoms, Post-mortem Appearances, Treatment and Prevention. With a Record of One Hundred and Twenty Cases by Different Observers. By JOHN GLAISTER, M.D. Glasgow, P.F.P.S. Glasgow, L.R.C.S., L.R.C.P. Edin., D.P.H. Cantab., F.R.S. Edin., F.C.S.; Examiner in Forensic Medicine and Public Health for Diplomas in Medicine and Surgery, and for Diplomas in Public Health of the Scottish Triple Colleges, Regius Professor of Forensic Medicine and Public Health in the University of Glasgow; Medico-Legal Examiner in Crown Cases. Edinburgh: E. & S. Livingstone. 1908. Pp. 279.

NOTWITHSTANDING that the extremely poisonous character of arseniuretted hydrogen has been well recognised, comparatively little attention has hitherto been bestowed upon it in books devoted to forensic medicine and toxicology, even in the first edition of Dr. Glaister's own excellent text-book on Medical Jurisprudence the subject is disposed of in less than

two pages. The author has therefore done good service in collecting the records of one hundred and twenty cases by different observers, and in pointing out some practical means by which poisoning by this gas may be prevented.

Arsenic as an impurity exists in so many substances that cases of such poisoning are likely to crop up from time to time if its dangers are not appreciated and the presence of hydrogen arsenide is not recognised.

The generation of hydrogen for laboratory purposes, the filling of toy balloons with gas derived from a primitive Marsh's apparatus, the gas used in military aeronautics, each of these furnishes its quota to Dr. Glaisher's list of cases recorded, and the cause in each case is the same—the impurity of the zinc or of the acid, or of both, used in the generation of hydrogen. As regards the acid, the increasing use of Spanish pyrites in the production of crude sulphuric acid should lead us to anticipate the presence of arsenic in this substance. The cases cited by the author which have arisen through the use of such acid for industrial purposes lead us to think that poisoning by arseniuretted hydrogen is more frequent than is generally believed.

The symptoms produced by the gas begin with a feeling of illness and great weakness, giddiness, faintness, pains in the head, and epigastrium, coldness of the body, sense of oppression of breathing with or without cyanosis, nausea, sickness, and vomiting. These are quickly followed by continuous vomiting of bilious matters at first, and later of bloody material; jaundice, ranging from golden yellow through coppery, bronze, and Mulatto tints to mahogany, which extends usually over the whole body, but which in lighter cases may be located solely in the conjunctiva; thirst and dryness in the throat with weakness of the voice, pains in the loins, pains or sense of fulness over the region of the liver, hæmorrhages from one or more different parts of the body, hæmoglobinuria or hæmaturia, oliguria, and in cases going on to a fatal termination anuria, and clear intellectivity, but sometimes minor degrees of stuper, although generally before death some measure of unconsciousness with or without delirium supervenes. "The keynote of the symptom-

ology would seem to be the rapid dissolving or hæmatolytic action of the gas upon the blood corpuscles and the resulting incapability of the corpuscles to convey sufficient oxygen to the different organs of the body, together with the inability of the emunctory organs, liver and kidneys, to cope with the elimination of the dissolved hæmoglobin." The treatment resolves itself into three main lines :—(1) To provide, in some artificial manner, oxygen to the blood, which by reason of its state is incapable of being sufficiently aerated in the lungs ; (2) to get rid of the poison from the body ; (3) to treat urgent symptoms.

In the author's opinion the prompt administration of oxygen by inhalation affords the most effective means of treatment. When oxygen cannot readily be procured, he suggests the internal administration of hydrogen peroxide, or of "sanitas" in small, but frequently repeated, doses.

The free action of the skin promoted by hot or vapour baths, or by the hot wet pack, will help towards the elimination of the poison.

He draws attention to the tendency to fatty degeneration which the heart muscle undergoes, and the consequent danger to the patient days after the primary effects of the poison have been survived.

The description of analytical methods for the detection of arsenic in small quantities will be of service chiefly to the skilled chemist, but the main part of the book will be of real service to the practitioner of medicine who may be called on at any time to treat a case of poisoning from this gas to which too little attention has been devoted heretofore.

Folia Therapeutica. October, 1909.

THE "Clinical Causerie" as usual contains an interesting amount of therapeutic gossip ; but the author in his paragraphs on puerperal cases, recommending a rational puerperium, quotes Dr. Haultain as introducing the treatment of allowing puerperal cases up on the third day ; and claims that women who follow this course "expel clots which would otherwise stagnate in the genital passages and lead to the risks of sepsis."

To ascribe this practice to Dr. Haultain is on a level with ascribing the discovery of the source of puerperal fever to Semmelweiss—who in 1847 discovered anew not alone the cause but the preventive treatment. But the fact remains that both Haultain and Semmelweiss were anticipated by a pupil of Smellie's, who in a monograph of one hundred and fifty odd pages told clearly and tersely the nature of puerperal fever, the necessity for cleanliness, and the advantages of allowing the lying-in woman up on the third day, and published his "Treatise on Child-Bed Fevers, and on the Methods of Preventing Them," in 1774. His clear, concise statements compare very favourably with the acrimonious verbosity and diffuseness of "*Die Ätiologie.*"

"Thyroid Inadequacy" is the title of a very valuable contribution to the study of this imperfectly understood subject, and well repays reading; and is very likely to stimulate interest and elicit opinions on the therapeutics of the gland.

Manual of Surgery. By ALEXIS THOMSON, F.R.C.S. Ed.; Assistant Surgeon Edinburgh Royal Infirmary; Surgeon to the Deaconess Hospital, Edinburgh; and ALEXANDER MILES, F.R.C.S. Ed., Assistant Surgeon Edinburgh Royal Infirmary; Surgeon to Leith Hospital. In Two Volumes. Third Edition, Revised and Enlarged, with 339 Illustrations. Edinburgh, Glasgow and London: Henry Frowde and Hodder & Stoughton. 1909.

THE authors in the edition before us have adhered to their original plan of furnishing a systematic view of the present-day aspects of surgery in a manner sufficiently detailed to render it useful to the practitioner and student alike.

The work has been thoroughly revised, and in the process of revision many of the sections have been recast so as to incorporate new ideas and advances. In the section devoted to bacteriology, Wright's views and theories are incorporated, while in the chapter on inflammation and its treatment Bier's method of treatment is concisely described and amply illustrated. In connection with the use of tuberculin in diagnosis, the conjunctival reaction of Wolff-Eisner and Calmette is fully

described. The authors state that the test is of great value when it gives a positive result; but they fail to state that it is a highly dangerous method to resort to in that on more than one occasion it has led to the development of tuberculosis of the conjunctiva, and ultimately to loss of sight. Those who were most in favour of it some time ago have now quite discarded this method of applying the test.

Von Picquet's cutaneous reaction is also fully described. The specific or vaccine treatment is nicely outlined. Full justice is done to the advances in our knowledge of the ætiology of syphilis. No mention is made of the present-day suggestions for the treatment of syphilis by the administration of various arsenical compounds, which have been so extensively employed on the Continent during the past two years. Nor is any mention made of the serum diagnosis of syphilis, a method of diagnosis which is of considerable importance and which has recently been greatly simplified.

The first volume is increased by no less than 78 pages, and, as only some two years have elapsed since the second edition appeared, this will give some idea of the amount of revision the work has undergone.

Volume II. opens with four excellent chapters upon the surgical injuries and diseases of the head and brain. Full justice is done to Harvey-Cushing's recent work in this connection; but we think a more definite stand should be taken in respect to the treatment of compression of the brain due to hæmorrhage resulting from fractures of the base of the skull. Our own view is that no case of fracture of the base of the skull should ever be allowed to die from compression of the brain without making an attempt to relieve the compression by the performance of Cushing's subtemporal decompression operation on one or both sides.

The second volume is increased by over 50 pages as compared with the second volume of the second edition.

The same excellent feature is retained in the edition before us—viz., a short epitome of the surgical anatomy of the region under description at the beginning of each chapter or section. As we stated of the previous editions, so we can of this—the third—edition, that the work is one of the best, if, indeed, not

the best, for either the student or practitioner, and we strongly recommend it to everyone preparing for the various examinations in surgery.

The Awful and Ethical Allegory of Deuteronomy Smith.

Edinburgh: E. & S. Livingstone. 1909. Pp. 68.

THIS clever skit in ten short chapters tells of the snares and pitfalls which lie in the path of medical students in the "City on the Hill," and how our poor hero extricates himself out of them by the aid of an "uncle" and some fellow-students. With all his faults, and they are not a few, he is a lovable character, not vicious, simply foolish. He became a votary of Bacchus, too intimate with his "uncle"; came to be considered "not a bad fellow after all" by the constable; and ultimately succeeds in satisfying the "elders of the Temples of Learning" that he is a fit and proper person to be entrusted with the care of the health of His Majesty's subjects.

Minor Gynæcology. By V. ZACHARY COPE, M.D., B.S.;
Surgical Resident, London Temperance Hospital; late
Resident Medical Officer, The British Lying-in Hos-
pital, &c. London: John Lane. 1909. Pp. xi + 274.

THIS is a nicely written little book, which will undoubtedly be found to be of value to the student and the general practitioner. It contains a useful summary of minor gynæcology, in which the different conditions are treated from the point of view of the non-operating specialist. At the same time, reference is always made to the indications for operation. The last chapter deals with minor gynæcological operations, such as curetting and dilatation of the cervix and operations on the vulva.

There are some dozen full-page plates which are for the most part very good, but the illustrations in the text are not deserving of a place in a book of the kind. They are too diagrammatic and too incorrectly drawn. A couple of Schultze's (not Schultz) original illustrations have been reproduced, but the relations of the bones of

the sacrum and the symphysis have been reproduced incorrectly. The publishers, too, would, we think, be well advised if they did not inflict a number of uncut pages on their readers, who, when they consult a small work of this kind, are not usually pleased with such a cause of delay.

"Semmelweiss, His Life and Doctrine: A Chapter in the History of Medicine." By SIR WILLIAM J. SINCLAIR, M.A., M.D.; Professor of Obstetrics and Gynæcology in the University of Manchester. 8vo. Portrait and Illustrations. Manchester: the University Press. 1909. Pp. x + 369.

PROFESSOR SINCLAIR deserves the thanks not only of obstetricians but of every branch of the medical profession interested in the modern doctrines of asepsis and antiseptis for the clearness with which he has laid before his readers the history of the introduction of these doctrines. Between Semmelweiss, pondering on the resemblance between the disease which proved fatal to his colleague, Professor Kolletschka, and the disease which was carrying off scores of lying-in women, and Lister and Pasteur tracing the actual connection between septic bacteria and septic poisoning, there is a wide gap, but none the less did Semmelweiss' laborious work pave the way for the more scientific and exact discoveries of a later date. For this reason the story of Semmelweiss' life, his "discovery," its fruits, and his reward, constitute one of the most interesting pages of medical literature, and we are glad to think that it has been laid before English readers by so admirable an editor and author as Professor Sinclair.

His book, starting with a brief introduction and a few pages on the parentage and nationality of Semmelweiss, goes on to discuss his life in Vienna before and during the time of his great "discovery" or doctrine. The writer then goes on to discuss the spread of that doctrine during the time Semmelweiss remained at Vienna, and he quotes at length Hebra's first article in the *Journal of the*

Medical Society of Vienna in support of Semmelweiss' work and practices. The next chapter deals with the life of Semmelweiss at Buda-Pesth, and with the preparation of his great "*Die Ætiologie*" of the fevers of childbed. This work was published in 1860, and ran to some 540 pages. In the following chapter Professor Sinclair deals with it at length, and quotes numerous extracts from it. The remaining chapters deal first with Semmelweiss' death, which tragically occurred from a cause almost identical to that from which Professor Kolletschka died, and then with an account of the spread of his doctrines and of the opinions of his fore-runners and contemporaries.

The book deals with a most striking personality, whose work has left a permanent and never to be effaced mark on both obstetrical and surgical practice. Semmelweiss has found a worthy biographer who has made a noteworthy contribution to medical literature, and whose understanding of the work and sympathy for the trials of his subject are obvious.

Exercise in Education and Medicine. By R. TAIT
M'KENZIE, B.A., M.D. Philadelphia and London: W. B.
Saunders Co. 1909. 8vo. Pp. 406.

PHYSICAL education is so completely neglected in Ireland that it comes upon us with a shock of mild surprise that in the democratic Republic of the United States the subject should be held of such importance that a professor of physical education should be attached to a university. Dr. Tait is Professor of Physical Education in the University of Pennsylvania. Doubtless, similar chairs exist in other American universities; but in Ireland the subject is handed over to anyone who chooses to pose as a teacher, no matter how little his or her qualifications may be. Very possibly the intelligent and public-spirited amateurs who form our two educational boards would gladly obtain the assistance of specialists in physical education, but where are they to be found? The nearest

approach to the real article is probably a well-informed medical man, and possibly one of the first steps in improvement would be to have representatives of the medical profession as such on our Boards of Education. We understand that resolutions to this effect have been passed by the Royal College of Surgeons and the Irish Medical Association. Let us hope that they have been favourably received by the authorities to whom they have been presented.

Professor M'Kenzie's book is divided into two parts. The first treats of exercise in Education, and the second of exercise in Medicine. In the first part a short account is given of the origin and character of the German and Swedish systems, and mention is made of the Japanese Jiudo. The author's views of the Swedish system are summed up as follows:—Swedish gymnastics are educational because they are progressive, definitely arranged according to a fixed law, and require prompt response to the word of command. But to be called a complete system they must include free outdoor sports and games. In the States it appears that the gymnastic lesson is frequently replaced by skating, games, or dancing. The characteristic apparatus of the German gymnastics are the parallel bars, the horizontal bar, and the vaulting-horse, but the system includes all sorts of free exercises, dumb-bells, rings, clubs, dancing, &c. The importance with which physical education is regarded in Germany may be judged from the statement that in Berlin alone there are more than 1,500 trained teachers of gymnastics, and at the Turnfest held at Frankfurt in 1908 30,000 turners were paraded.

Dr. Tait alludes to the doctrine of "relaxation," as in the Dalsarte method which is practised in young ladies' schools in the States, and to the doctrine of "contraction" as popularised by Sandow. Of the latter he justly states that it develops muscles undoubtedly, but as there are no movements requiring fine or complicated co-ordination it is not useful for the habitual movements of every-day life.

The author himself gives a scheme of exercises for the

average middle-aged business man at page 134, which appears to us unexceptionable.

The work contains an account of something of what is being done for physical education in the States, in schools, universities, and municipalities, and will be read with advantage by all medical or lay men who take an interest in the health of the rising generation. The second part treats of physical exercise in Medicine, flat foot, scoliosis, round back, diseases of the circulation and nutrition and nervous diseases.

This part of the book appeals more directly to the medical profession, and will be found suggestive and stimulating even by those who do not agree entirely with its conclusions.

The Morphia Habit and its Voluntary Renunciation.

By OSCAR JENNINGS, M.D. (Paris). London: Baillière, Tindall & Cox. 1909. Demy 8vo. Pp. x + 492.

EVERY medical man should study this interesting book: he should appreciate the danger of inducing the habit and the difficulties of its renunciation, for we believe that on both these points more knowledge is wanted amongst the rank and file of the profession.

Dr. Jennings is an acknowledged authority on the subject, and his writing carries with it the conviction that he knows and has thought well over what he is writing about. His treatment of the morphin habit is founded on such sound principles that it may be applied to any similar habit. Gradual renunciation with, at the same time, gradual re-education of self-control is the fundamental basis on which he works, and we agree with him that any system of treatment which ignores this restoration of strength-of-mind or self-control (which must be gradual) is doomed to failure sooner or later. To attain this it is essential that constant, kindly, sympathetic, intelligent medical assistance should be at hand, and it is here that the value of his experience will be appreciated in the countless difficulties that will be met with.

He recognises the necessity of therapeutic measures as adjuvants to the treatment in dealing with such requirements of the circulatory, digestive, and other systems as may and will arise from time to time, and if any exception is taken to them it can only be on details and not on the general principles. Dr. Jennings has so generously given these minute details of the treatment which his great experience has shown to be of most service, that it is open to anyone with this book before him to apply the full value of that experience to any case he may have to deal with.

With the "knock-out" treatment, or the "substitution" treatment, he leaves us in no doubt of his strong disapproval, and we entirely agree with him. He deals with hypnotism and kindred eccentricities too leniently, but unfortunately it is necessary to discuss them.

We must confess astonishment at the startling announcement in the preface that "one medical man in four is a drug *habitué*." We are not in a position to dispute this statement as regards the profession in other countries, coming as it does from such an authority, but so far as Ireland is concerned we cannot endorse it. There are many respects in which the practice of our profession differs from that which obtains across the Channel, and if the above statement is correct there, we can congratulate ourselves that in this matter, at least, we are in a happier position.

Transactions of the American Otological Society.

Forty-second Annual Meeting. Harvard Medical School, Boston, Mass., June 1 and 2, 1909. New Bedford, Mass.: Mercury Publishing Co. 1909. 8vo. Pp. x + 234.

THE published Transactions of the American Otological Society, which contain the papers read and a report of the discussions at the annual meeting of the Society, always afford interesting reading. Amongst those present at the meeting we recognise many names of men well known as contributors to the literature on the ear and its diseases, and we purpose in this review to shortly indicate papers of interest, so that anyone who works in these

subjects can look them up if they notice anything which appeals to them.

Dr. E. A. Crockett gives an account of six cases of Acute Suppurative Leptomeningitis, in which he operated early and drained the meningeal spaces with considerable benefit to the patients. In some cases a brilliant recovery followed.

A good many papers on cases of Brain Abscess and Sinus Thrombosis were read, and, in a very good paper, Dr. Percy Fridenberg collected together a number of the recent Theories on the function of the Labyrinth. About these theories it will be sufficient to say that their divergence was their most remarkable feature.

A very full discussion also took place after the reading of three papers on Nasal and Naso-pharyngeal Conditions as Causative Factors in Aural Disease. Two gentlemen presented specimens of Necrosis of the malar portion of the Temporal Bone, and in their remarks laid stress on the fact that if these sequestra are allowed time enough to separate it is possible to remove them without tearing the great vessels.

This does not by any means exhaust the list of communications, and one can only add that it would have been most interesting to have been present at the meeting, and to have listened to this series of most excellent papers.

Transactions of the American Urological Association, Vols. I. and II. Edited by CHARLES GREENE CUMSTON, M.D. Brookline, Mass.: Riverdale Press. 1908 and 1909. 8vo. Pp. 235 and 276.

THESE two volumes represent the work done at the sixth and seventh annual meetings of the Association. Each volume contains a number of papers on various subjects of urological interest. Many of the papers are profusely illustrated. The names of Cabot, Lydson, Keyes, and Hugh Young amongst those who contribute papers are sufficient to show how valuable the study of these volumes will prove to all medical men interested in urological work. A *verbatim* report of the discussion which followed the reading of each paper greatly adds to

the value of the work, the reader obtaining the views held by numerous authorities on the subject under discussion. These views have the added advantage of being thoroughly up-to-date—a point of no small importance in a subject like urology, which has made such rapid strides of late years.

Out of a large mass of good material the following papers are worthy of specially careful study:—"Multiple Ureteral Calculi," "New Growths of the Urethra," and "Pyelonephrosis complicating the *post-partum*."

The volumes are edited by C. G. Cumston. The printing and illustrating of the books leaves nothing to be desired. (Riverdale Press, Brookline.)

The Heart and Sudden Death. By THEODORE FISHER, M.D., M.R.C.P. London: The Scientific Press, Ltd. 1908. Pp. 53.

THIS little book consists of a series of chatty, somewhat discursive, articles, most of which originally appeared in *The Hospital*. The observations are stated to be based on an experience of 2,500 autopsies, but we find many dogmatic statements which would be more convincing if direct evidence of their truth had been adduced. Dr. Fisher believes that the condition of the heart muscle, rather than that of the valves, is of importance in determining a sudden fatal issue. The serious nature of aortic valvular disease is, he believes, chiefly due to failure of nutrition of the muscle consequent on obstruction of the coronary arteries by coincident disease of the aorta. For such a statement as the following, however, some support is necessary, but none is given:—"It is probable that a case of sudden death in a young adult, where nothing abnormal can be found in the heart, is the result of the poisoning of the heart by toxins which have entered the body by means of food." (P. 53.)

The papers, while suitable for a mixed audience, such as readers of *The Hospital*, hardly stand the test of republication in book form. Crudities of expression, such as the split infinitive, are not infrequent.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR CHARLES BALL, F.R.C.S.I.
General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF OBSTETRICS.

President—H. JELLETT, M.D., F.R.C.P.I.
Sectional Secretary—GIBBON FITZGIBBON, M.D.

Friday, November 5, 1909.

THE PRESIDENT in the Chair.

Exhibits.

DR. E. HASTINGS TWEEDY exhibited a specimen of multiple myoma of the uterus. In such cases one would, if possible, perform a myomectomy. But in the case before them it would have been very difficult, as the uterus was absolutely riddled with tumours. It appeared as a smooth myomatous uterus, but on splitting it they could hardly see any muscular structure, and each of the two or three hundred myomas was absolutely distinct, some degenerating, some not. The patient had a temperature, and macroscopic specimens had the appearance of malignancy, but Dr. Rowlette told him he could find no malignant disease.

DR. TWEEDY exhibited a specimen of an ordinary Wertheim's operation in a girl about twenty-four years of age. There was very considerable ulcerative cancer spreading into the broad ligament. The operation went well until he began to remove the cervical part of the uterus. The cancer then broke away, and he got the end of the vagina. He was able to shut off the intestines, and the woman did not become infected. What was particularly interesting was that he traced up the ureter, and found that while the cancer spread above and below the ureter

it was not diseased. The ureter was so intimately associated with the cervix that in dealing with it one had to hug the cervix to avoid the ureter. He pushed down the bladder far into the vagina, and got his finger between the vagina and bladder. He worked the bladder laterally, and was able to dig the ureter completely out of the cancer, and took away the microscopic evidence of the disease. That was three weeks ago. The patient had gone on very well until a week ago, when her temperature ran up, and a foetid discharge arose. Though she could now hold a certain amount of urine in the bladder, still a quantity passed away, and he had no doubt he was now dealing with a ureteral fistula. In the majority of cases such fistulae healed spontaneously; but from the accounts which he had read on the subject he found that the ureter practically never became patent again. The urinary discharge would dry up. The ureter cicatrised, and the kidney ceased to secrete. They would get a hydronephrosis only so long as there was some fluid passing through the ureter. If they did not allow a drop to escape through the ureter, the kidney would not secrete urine; and his hope was that the cicatricial matter would absolutely occlude the ureter, and the kidney would become inert.

SIR WILLIAM SMYLY said ureteral fistula was a risk that anyone was liable to who undertook Wertheim's operation. Recently, when assisting in a case where the ureter had been cut accidentally and where implantation into the bladder was impossible, he had persuaded the operator to ligature it with silk and fix it in the abdominal wound. In that case it was found necessary afterwards to extirpate the kidney.

THE PRESIDENT OF THE ACADEMY said he had once transplanted the ureter into the bladder, and as far as he knew no leakage occurred, and no obvious kidney tumour developed. He would be interested to see the result in Dr. Tweedy's case, as it was difficult to understand why hydronephrosis should not occur when the ureter was completely blocked whereas it occurred where the obstruction was only partial.

THE SECRETARY recalled a case of Sir Arthur Macan in which the urine continued to be secreted as freely as ever from the kidney belonging to the detached ureter, and showed no sign of cicatrisation of the cut end of the ureter, or blocking off of the kidney.

THE PRESIDENT said one could understand that there was a

kind of race between the function of the kidney and the destruction of the substance by back pressure, and he would be inclined to think that hydronephrosis would result before the destruction of the kidney substance.

DR. TWEEDY, in replying, said that he had in his remarks exactly summed up the conclusions of the experiments that he had read, the last being from the Johns Hopkins Hospital within the last six months. The ureter was simply cicatrised over, there was no patency, and the kidney ceased to secrete. Sir William Smyly's case was not comparable with the condition of spontaneous healing. It was almost impossible to get the ureter to unite permanently by tying.

DR. PUREFOY exhibited a specimen of pyosalpinx, which had reached a very considerable size in a short time, and had arisen under circumstances which made its origin difficult to account for. The patient had been married several years, and was childless. She had lived abroad, and had had malarial fever and other illnesses incident to residence in a tropical climate. She came under his care for a trifling catarrh of the uterus, and became, as he believed, cured. She went to the country, for a few weeks, where she was attacked with what she thought to be malarial fever, with severe abdominal pains and tenderness. On her return to town it was quite easy on palpation to find a tumour taking its origin from some of the pelvic organs. He waited for six weeks before operating. On opening the abdomen a rounded tumour came into view completely concealing the uterus, to which it was extensively adherent. In separating it, to his great distress the sac ruptured, and a quantity of pus escaped. He was, however, happy to add that the patient had an uninterrupted recovery. There was no ground for thinking the condition to be due to any gonorrhœal affection. There was no evidence of tubercular disease, still he took it that it originated in tubercular salpingitis. She had no signs of tuberculosis, but her family history was unfavourable.

DR. TWEEDY said it seemed to him worthless to leave a uterus that could be of no use when the tubes were gone. When a tube burst, and pus flowed into the pelvis, it was largely a matter of chance if the patient would recover. If the pus was septic, he knew of no way to avoid the giving of sepsis. If there was any doubt as to the nature of the pus, it would, he thought, be safer to cut away the uterus, and the tube at the other side: this

would have provided a large hole for free drainage. That hole and the vagina should be packed with a large quantity of iodoform gauze, and the gauze spread out right over the pelvis whither the pus had flown, and to which the intestines would come the moment the patient was moved out of position.

SIR W. SMYLY said he had taken out one tube, and the woman had become pregnant afterwards. He did not think it good practice in every case to remove both tubes and uterus, but where there was soiling of the pelvis and where both tubes had to be removed, he considered it good practice to remove the uterus also.

DR. HORNE said he had recently adopted the practice recommended by Dr. Tweedy in a similar case, the patient did very well up to the fifth day, when she complained of pain in the region of the heart, and rapidly sank in a few hours; he wished to ask Dr. Purefoy what treatment he adopted when the pus escaped into the abdominal cavity?

THE PRESIDENT thought it difficult to say positively that the case was tuberculous, and he suggested that it originated as one of extra-uterine pregnancy, and that a hæmatoma formed in it and suppurated. He was afraid he was in a minority in thinking it good practice to leave the uterus even if both tubes were removed. If any portion of the ovaries was left behind, menstruation would continue, which was an important matter from the point of view of the mental comfort of the patient.

DR. PUREFOY, in reply, said it was possible to lift the tumour out of the abdomen to some extent. He had packed the surrounding area with sponges, and the patient escaped contamination from the fact that the adjacent structures had been protected, and the point of exit was outside the incision, and somewhat out of the scene of operations. His recollection was that there was no palpable disease of the other tube, and the case was so serious that he was glad to avoid any unnecessary removal of other parts, and to conclude the operation so far as was compatible with the safety of the patient.

President's Address.

[The President's Address will be found at page 401, Vol. CXXVIII., December, 1909.]

THE PRESIDENT OF THE ACADEMY said the questions raised were of extreme importance. As a member of the General

Medical Council he had a good deal to say to the whole question, and the chief difficulty experienced by the Council was that of proper hospital teaching. In Dublin they were singularly fortunate in that respect, but some of the provincial towns—and even London—were not so fortunately situated, and the principal opposition to the recommendations had come from the licensing bodies, who did not see their way to get such education for their students. Some persons thought the recommendations should have gone further than they did; but some of them, it could not be doubted, would lead to better education. Those of the Council who were not gynaecologists and obstetricians were very strong on the point that students should be clinical clerks and surgical dressers before taking up practical midwifery, so that they might obtain a reasonable amount of teaching in the practice of antiseptics. The General Medical Council could only make suggestions; but their experience was that while some of the recommendations were kicked against at first, they were usually carried out. It had never been necessary for the Council to exercise its power to report the non-adoption of recommendations to the Privy Council, an action which might lead to the qualifications of the particular body not being registered. He believed that the recommendations would in time be carried out and strengthened, but they had to move slowly.

DR. KIDD said he agreed with the President of the Section that a period of six months was one which allowed the student to obtain the necessary knowledge with greater ease than if it was reduced to three months. He thought an alternative might be made with regard to the period spent as an intern in attending a lying-in hospital. A man living inside the walls of a maternity institution saw everything that was going on, he lived in an obstetric atmosphere. If attending as an extern student two nights in the week, whether he saw a case or not, it was difficult for him to devote his attention to lectures next morning. He thought too little attention was paid to the taking of ample notes of cases either in the house or in the extern department, and it should be the duty of assistant masters or clinical clerks to see that notes were taken and signed by the officer of the institution before credit was allowed for the case. When the question of the clinical examination had first come under his observation, he had hesitated as to the feasibility of its being made practical or practicable; but experience had shown him that the difficulties

which he had conjured up were to a great extent imaginary. A practical test was quite feasible as regards palpation, and the general conditions in the puerperium and questions could be asked to supplement the history that the student gave. He was disappointed in the notetaking.

DR. TWEEDY thought it was a hardship on the student to cut down the course of instruction to three months. But there was one safeguard in the rules that had lately come into force, which had put the new rule ahead of any of the older forms—the rule that a student had to attend thirty-two times within three months. That rule made it impossible for a maternity hospital to give a three months' course on a one month's residence.

DR. GIBSON thought the period, instead of being reduced, should be raised to twelve months. But if a man lived in a hospital for one or two months, he would learn far more than from attending twice a week for half a year, and should be spared further attendance.

THE SECRETARY agreed with Dr. Gibson. Even in six months, of two nights a week, he did not think one would see a quarter of the number of cases which one would see if resident day and night.

THE PRESIDENT OF THE ACADEMY rose to accentuate what Professor Kidd had said about notetaking. The same thing applied to all other branches of the profession, and the result was that, while their students could hold their own as far as practical subjects were concerned, in competition for the services, they were very much behind English and Scottish students in the reports of a clinical case, and the commentary on a hypothetical case which formed part of the Army Medical Examination.

THE PRESIDENT, in reply, said he recognised the difficulties that existed, and the necessity for advancing with caution and care. They might all agree that the caution and care had been very well marked in the past, and trust that advance in the future would be characterised by more boldness. It seemed to him that for the qualified man there was no question that one month inside was better than three outside, but he doubted whether the average student could assimilate what he saw, as he could if it was spread over a longer interval. He was therefore more inclined to agree that the time should be extended to a year. Everyone recognised the practical examination as a great step forward, and the marking should, in an entirely new departure, be lenient at first.

SECTION OF PATHOLOGY.

President—A. H. BENSON, M.B., F.R.C.S.I.

Sectional Secretary—W. BOXWELL, M.B., F.R.C.P.I.

Friday, November 12, 1909.

THE PRESIDENT in the Chair.

President's Address.

THE PRESIDENT delivered an address "Concerning Trachoma."
[It is published in full at page 13.]

Hypertrophic Cirrhosis with Alcoholic Paralysis.

DR. DRURY read notes of a case of this disease. A. B. was a large stout woman, aged forty-two. She had had twenty pregnancies, with thirteen living children and seven mishaps; these latter having been irregularly distributed between the live births. There was no history or evidence of syphilis. She was admitted to hospital in a state of alcoholism, and she had an alcoholic history. She complained of weakness and "pins and needles" in her feet and hands. There was an abrasion on both knees from her legs having "given under her" on getting out of bed. Her mind was quite clear. The lungs were healthy. The heart was strong and regular, but there was a mitral systolic murmur. There was not, however, any evidence of failing compensation. The movements of the limbs were good, and the hands could be extended to the full, but the muscular action was weak. The muscles of the arms, especially the extensors, were painful to pressure. Those of the legs were in a similar condition, and attempts at voluntary flexion caused pain in the calf. The reflexes were absent; while sensation, though perverted, was still present. It was evident that the patient was in an early stage of peripheral neuritis. This gradually developed from day to day until there resulted complete "drop wrist" and "drop foot." She could draw her legs up in bed, but could not extend them again. The abdomen was very large and pendulous; at the umbilicus was a tumour about the size of a hen's egg, which was the empty thickened sac of an old-standing umbilical hernia. The liver and spleen were both greatly enlarged; there was no ascites. Jaundice was present, the conjunctivæ being of a bright yellow colour, but the coloration

of the skin was such that it might easily escape notice. The urine was high-coloured and clear, without albumen or sugar; it was faintly alkaline to litmus, and a drop of acetic acid brought down a dense cloud of urates; it gave the iodine reaction for bile. The fæces were lighter than normal in colour, but contained bile colouring matter, and were not China-clay like. The liver was very large, reaching in the para-sternal line more than two hand-breadths below the lower border of the ribs. It was readily palpable; was smooth and firm, with a sharp hard margin, but of normal shape, and painless. Simple hypertrophy was excluded by the extreme firmness of the organ and the remarkable sharpness of the edge; it was, moreover, larger than one was likely to find in simple fatty liver. Amyloid disease was excluded by the absence of any cause for such, the history of the pregnancies being alone sufficient to preclude syphilis. The painless condition, great enlargement, and absence of cardiac symptoms excluded congestion. There remained hypertrophic or biliary cirrhosis, and all the symptoms and signs supported this diagnosis. As time went on the jaundice did not materially increase. She had a continuous but quite irregular febrile temperature for some five days, and then (October 10th) developed a profuse diarrhœa without assignable cause. The only medicine she was taking was quinine in small tonic doses, and this was immediately stopped. The diarrhœa continued uncontrolled, in spite of opium, for seven days, and then ceased, apparently under the influence of lead and opium pill. The attack of diarrhœa caused a great change in her condition. She became rapidly and alarmingly weak, and fell into a heavy lethargic or semi-comatose state, but complained of sleeplessness and nightmare. The sleeplessness did not yield to hypnotics. The heart sounds became so weak that the murmur, which was at first loud, could not be heard. The temperature fell to sub-normal, a collapse temperature rather than a normal or afebrile condition. With the increasing neuritis she became quite helpless, and so sank gradually lower, till she died rather suddenly on the 24th of October. The great enlargement of the liver having the characters already described, the enlarged spleen, the jaundice without ascites, the irregular fever, the profuse diarrhœa, the bile coloured fæces, and the great asthenia passing into semi-coma, and death, together produce the clinical picture described by Hanot, which has been named hypertrophic, or biliary, or insular cirrhosis of the liver.

PROF. O'SULLIVAN gave the following account of the *post-mortem* findings:—

“The liver weighed 7 lbs. 11 ozs. The increase in size was fairly uniform in both lobes, but was much greater antero-posteriorly than from side to side. Its capsule was somewhat thickened; it was finely granular on the surface, and of a light greenish-yellow colour.

“On section, the connective tissue was seen to divide the liver up into small areas about as big as, or smaller than, a lobule. Under the microscope there was a great quantity of connective tissue arranged on the whole with a tendency to surround lobules. It also sent delicate strands everywhere in between the liver cells. There was extensive fatty infiltration, and the liver was stained green in places with bile pigment. The connective tissue outside the lobules contained great quantities of newly-formed bile ducts.

“A section of the external cutaneous nerve showed extensive degeneration, all the larger fibres being degenerated; the myelin and axis cylinders were broken up, and the nuclei of the sheath were increased.”

Perforated Gastric Ulcer.

DR. J. B. COLEMAN, C.M.G., exhibited certain viscera of a woman, aged thirty-four years, who died with symptoms of gangrene of the lungs, consecutive to perforated gastric ulcer. The autopsy revealed a small ulcer, which had perforated, on the posterior wall of the stomach, two inches from the fundus. Its sinuous track from the perforated ulcer led, by a perforation in the diaphragm, into an abscess cavity, one and a half inches in diameter, between the diaphragm and the base of the left lung. The lower lobe of the left lung contained several abscesses and gangrenous areas.

Stercoral Ulcers in Small Intestine.

DR. ROBERT ROWLETTE showed a specimen of the above. The organ had been obtained, *post-mortem*, from a woman who had suffered from diarrhoea for seven years. For the last two years she had not passed a solid motion. The lower three feet of the ileum were crowded with small ulcers, which had destroyed the greater part of the mucous membrane of the region. The ulcers were clean cut, reaching to the muscular layer, and some of them contained sloughs. In the caecum was similar ulceration of less

extent. In the ascending colon, close to the ileo-cæcal valve, was a stricture, whose lumen did not admit a lead pencil. The stricture was found to be due to scirrhus carcinoma. The condition of ulceration Dr. Rowlette believed to be identical with that occurring in the large intestine as the result of stasis of the contents. Of the four theories put forward to explain the ulceration—(1) irritation by scybala, (2) obstruction of the vascular supply by stretching, (3) bacterial invasion, (4) toxic solution, he inclined to accept the last.

SECTION OF MEDICINE.

President—WALTER G. SMITH, M.D.

Sectional Secretary—F. C. PURSER, M.D.

Friday, November 26, 1909.

THE PRESIDENT in the Chair.

Spleno-medullary Leukæmia treated by X-rays.

DR. MAURICE R. J. HAYES read a paper on this subject. Female, aged forty-two, married; no children. Symptoms directly referable to her disease began in August, 1906, but the enlargement of her spleen was first apparent in December, 1908. In February, 1909, when X-ray treatment was commenced, she was very anæmic and wasted; she suffered much from breathlessness and palpitation, her legs were swollen, and she had hæmic murmurs. Her spleen extended two inches to the right of the middle line, three inches below the umbilicus, and to the level of the crest of the left ilium. Liver was slightly enlarged; no enlarged lymph glands. For purposes of irradiation the superficial area of the spleen was divided into four circular areas, ten centimetres in diameter, and each one was exposed in turn, a liard tube being used. The average duration of each exposure was eighteen and a half minutes. From February 20 to November 25, 1909, twenty-two exposures were given. She had no treatment during July, August, September, and October, when she felt very much improved, and was able to perform her household duties. Her spleen had reduced in size till it was palpable for two and a half inches below the left costal arch, and it was freely movable. Palpitation, breathlessness and œdema had disappeared, and she looked very well—anæmia better. In the end of October her symptoms returned and X-ray treatment was resumed in November, to

which she is responding. She has had no medicinal treatment whatever for her disease. She at no time in the course of treatment suffered from any general or local symptoms which might be referred to the X-ray, save a slight dry dermatitis in April, when irradiation was suspended for three weeks. The reports on the blood-films, which were examined by Professor McWeeney and Dr. W. D. O'Kelly, are as follow :—

		Reds	Whites	Myelocytes per cent.	Hæmo- globin per cent.
Feb.	15	3,100,000	566,000	20 of whites	60
March	1	—	704,400	—	—
„	23	3,528,000	209,333	10 „	63
April	5	4,368,000	197,000	17 „	58
„	24	4,224,000	172,000	7.3 „	63
June	21	5,072,000	36,000	8 „	75
Nov.	15	3,488,000	168,750	14.3 „	77

THE PRESIDENT said that for himself, and he thought he was speaking also for his colleagues, he and they welcomed any treatment, even an empirical one, that promised to be of service in dealing with the disease. They had, however, to take into account the clinical fact that the disease was liable to very curious remissions, which would render the judgment of therapeutic success all the more difficult.

DR. WATSON said he had treated five or six similar cases, and had generally exposed the spleen in six or seven areas. In his experience the treatment had not shown itself to be of very great value.

DR. McWEENEY said he had been immensely surprised, after having seen the state of the woman's blood in February, to see her the other day in such wonderfully good health. He examined her blood and noticed how very well formed the leucocytes were, and he could not find a single normoblast. Whether the change was only the partial recovery that one met with in such cases it was impossible to say. It was essentially a disease of the marrow, and how could they expect to benefit it by radiating the spleen ?

DR. W. G. HARVEY said the radiating of the bone-marrow had been discussed and tried, and in no case had it been anything like as successful as radiating the spleen. It had been suggested some years ago that in the destruction of the lymphocytes and leucocytes which followed the radiating of the spleen there was a leucotoxin set free, which acted on the pathological cells formed. There was no doubt that the X-rays in general had a tendency to

destroy cells of a pathological nature rather than normal cells, and it did not seem impossible that, once the process had commenced, bodies might be set free which could continue to have the same action on remote parts of the body.

DR. C. M. BENSON said he had found that by treating the various parts separately dermatitis could be avoided. When a patient came back after a recurrence, it would be found that the tumour receded very much less quickly than on the first occasion, and in a case of long-standing, he had found it impossible to reduce the spleen at all.

DR. PARSONS quoted a case of his own which was almost identical with Dr. Hayes' case. She was fifty-five years of age, and had had a prolonged course of arsenic without any improvement. The condition of her white cells was almost identical at the end of the treatment with what it had been at the beginning. After the tenth or twelfth application of the X-rays a marked improvement took place in her blood, and the spleen decreased to such an extent that it was almost impossible to palpate it. She went away feeling perfectly well, but returned within a year's time with the spleen increased and a relapse in the condition of the blood. She again received benefit from the rays, but died in six months. It was quite certain that the rays effected a diminution of the spleen, but how it was brought about he did not know. The improvement in the blood was not brought about by the destruction of the white cells, although the rays might inhibit their formation.

DR. ROWLETTE said he had performed a *post-mortem* last year on the body of a patient who had died of heart disease while under X-ray treatment. The leukæmia was discovered when she was put to bed in hospital, and as far as it was concerned, she had improved considerably. In the microscopic examination of the spleen he did not find any of the patches which were said to be typical of the disease, and it was possible that the X-rays had caused their disappearance.

DR. HAYES, in reply, said he believed the woman's present condition to be due altogether to the X-ray treatment. Out of sixty-three cases collected as treated by the rays, only four were alive in from three to six years after the primary symptoms, so that it did not promise very well for the patient.

Sane Hallucinations.

DR. DAWSON read a patient's autograph account of these.

*FIRST ANNUAL REPORT OF THE DUBLIN
PASTEURISED MILK DEPÔT.*

By ELLA G. A. WEBB, B.A., M.D., R.U.I., AND LILY ANITA
BAKER, B.A., M.B., Univ. Dubl. and R.U.I.

A YEAR is, after all, too short a time from which to judge of the effects of any hygienic reform. The time required to make any noticeable mark on the health of even a section of the community is generally a much longer period—five or ten years. Also the success and failures incident to the actual beginning figure too largely in the total result when the period is a short one. It is only, however, by adding these yearly reports to each other that a valuable record is obtained, by which we can judge the success or failure of the enterprise. The Dublin Pasteurised Milk Depôt has just completed its first year of work, and in this Report an attempt has been made to classify the results of that work as shown by the effect on the babies which attend the Depôt, and are supplied with the milk.

A few words should be said first, however, about the causes and opportunities which led to the starting of the Depôt.

The Women's National Health Association felt that in their efforts to check the ravages of tubercular disease in Ireland a very great source of infection would be left out of account if efforts were not made to supply pure milk to the city. Incidentally also it was hoped that this pure milk supply might check to some extent the mortality from infantile diarrhœa, which is very high. The infantile mortality from all causes is very high in Dublin, the numbers being 143, 146, 156, 146 per 1,000 for the years 1905 to 1908.

A most favourable opportunity for this venture presented itself, in that Mr. Nathan Straus, of New York, generously gave a complete pasteurising plant as a gift to the Association on the condition they would set it up in suitable premises. After inspection of various premises, choice was made of a shop and adjoining dwellinghouse in Sitric Road, Arbour Hill, the decision being influenced by the fact that the house was placed in the midst

of a district of artisans' dwellings, and, therefore, close to the homes of those by whom the milk would be readily appreciated.

The architect of the artisans' dwellings gave every assistance in adapting the premises to suit the purposes of a milk depôt, and Mr. Straus kindly arranged that Dr. Green, who superintended the very great philanthropic work of this kind which Mr. Straus has carried on in New York for sixteen years, should come to Dublin to see that the installation was properly carried out.

A Consultative Committee of medical men, business men, milk producers, and other representative persons was appointed, and arrangements were made that the manageress of one of the best known London depôts should come to Dublin to help to start our Depôt on sound lines.

It was decided to supply pasteurised milk for general household use in pint and half-pint bottles, also, if required, in quart and gallon cans, while humanised milk would be supplied only by a written request from a doctor. This latter precaution was made to minimise the danger of any mothers being tempted to give up breast-feeding from the idea that the humanised milk was better. A group of formulæ for the various ages under a year was drawn up after careful deliberation. These are called *A.*, *B.*, *C.*, *D.* and *E.*, and are for standard use, but any special preparations can be supplied. Copies of the formulæ were sent to the various doctors in the city. They are as follows:—

A.—1st to 4th week.

$\frac{1}{2}$ oz. of 16 per cent. cream
 $4\frac{1}{2}$ „ full milk
 18 „ water
 1 „ lime water
 1 „ milk sugar
 8 bottles of 3 ozs. each.

C.—3rd to 5th month.

17 ozs. of full milk
 16 „ pure water
 3 „ lime water
 1 „ cane sugar
 20 grs. table salt.
 7 bottles of 5 ozs. each.

B.—2nd to 3rd month.

$1\frac{1}{2}$ oz. of 16 per cent. cream
 6 „ milk
 22 „ water
 2 „ lime water
 $1\frac{1}{2}$ „ milk sugar
 8 bottles of 4 ozs. each.

D.—5th to 9th month.

31 ozs. of full milk.
 11 „ pure water
 $\frac{1}{2}$ „ cane sugar
 7 bottles of 6 ozs. each.

E.—Full pasteurised milk.

6 bottles of 6 ozs. each.

The morning's routine work at the depôt is as follows :—

The man comes at 6 a.m. to light the boiler fire, as it takes from half an hour to three-quarters to get up steam.

At 6 15 a.m. the milk arrives. It is poured through cotton-wool and a fine strainer. The gallon cans are filled with milk and put into the pasteuriser ; these take almost one hour to pasteurise.

Next, a measure is filled out of each churn, and the specific gravity of the milk is taken. When these measures have been put aside for a few hours, the degrees of cream are counted and noted in a book.

The humanised milk formule are then made up, all the ingredients being very carefully measured and weighed. Each formula is then put into a vessel and thoroughly mixed before it is taken to the bottle filler. Many of the children are ordered citrate of sodium by their doctors. This is measured in grains, and put into the various mixtures when the bottles are filled.

The man fills the small bottles by the bottling machine, while the pint bottles and other large receptacles are filled by hand.

All the receptacles are then put into the pasteuriser by relays, and are heated as follows :—

Gallon cans for	40 m. at 180° to 165° F.
Quart „	30 m. „ 170° „ 160° F.
Pint bottles and all humanised mixtures	30 m. „ 160° F.

The bottles containing the humanised milk are pasteurised in crates which are marked with brass labels bearing the letters *A.*, *B.*, and *C.* for the purpose of identification.

All are then put into the cooling tank where a number of very fine jets of water play on the bottles for over two hours till all are quite cold.

The amount of milk dealt with at present is between twenty and twenty-five gallons, and the staff which does the work consists of a manageress and her assistant, who live on the premises, also a charwoman, and the man who manages the engine, machinery, &c.

The empty bottles which are returned to the Depôt are first put to steep in a large tank of cold water containing soda. They are then boiled in this mixture, washed by hand with a revolving brush, and finally passed through a bottle-washing machine.

The Depôt is open at present from 11 a.m. till 3 p.m. Every Tuesday a doctor attends from 11 30 to 12 30 to examine and

weigh any babies brought for inspection and to give advice as to change of diet, &c. The weights and other particulars are entered in a book, of which the following is a sample sheet :—

Name, Address,
 Date of Birth ? Date of commencing milk,
 Condition of child when commencing milk ?
 Disease ? Vomiting ? Diarrhoea ?
 Breast-fed for Artificially-fed for
 Breast along with artificial food for
 Kind of artificial food used ?
 Reason for giving up breast feeding ?
 Nurse child ? Legitimate ?
 Occupation of father ? Of mother ?
 No. of rooms occupied by family ? No. in family ?
 Wages per week ? Are parents clean ?
 Child properly clothed ?

Date Weight. Condition.

The following table shows the conditions under which sixty-seven definitely improved during the time they were taking the milk :—

Baby	Age Weaned	Why Weaned by Mother	CHILD'S CONDITION		Period getting P. Milk	Gain in Weight
			When Weaned	At Present		
	Months				Months	lbs.
H. W.	6	Delicate	Fair	Much improved	6	4
M. D.	3	Milk left	Very poor	Do.	9	8
T. S.	2	Delicate	Very delicate	Do.	9	10
P. S.	Twin	Do.	Do.	Do.	9	10
G. E.	7	Pregnant	Fair	Do.	6	7
C. M.	2	Sore breast	Very poor	Do.	7	6
M. F.	2	Rheumatism	Very delicate	Do.	6	4
F. S.	$\frac{1}{2}$	Milk left	Seriously ill	Do.	9	8 $\frac{1}{2}$
G. O'R.	5	Do.	Very ill	Do.	9	10 $\frac{1}{2}$
R. O'R.	Twin	Do.	Do.	Do.	9	9
M. K.	2	Do.	Very delicate	Do.	7	8
P. M'C.	1	Do.	Do.	Do.	8	4
M. B.	1	Do.	Delicate	Do.	8	11
E. S.	10	Weaning necessary	Food disagreeing	Do.	5	7 $\frac{1}{2}$
B. M. B.	2	Sore breast	Wretched	Do.	9	6
M. B.	Twin	Do.	Do.	Do.	9	5
M. K.	3	Delicate	Very ill	Do.	8	7 $\frac{1}{2}$

Baby	Age Weaned	Why Weaned by Mother	CHILD'S CONDITION		Period getting P. Milk	Gain in Weight
			When Weaned	At Present		
	Months				Months	lbs.
C. C.	$\frac{3}{8}$	Sore Breast	Very delicate	Much improved	8	4
J. C.	8	Milk left	Do.	Improved	6	3
E. K.	At birth	Do.	Very ill	Much improved	4	4
C. M.	$\frac{1}{2}$	Inflamed breast	Fair	Do.	2	3
J. K.	$\frac{1}{4}$	Milk left	Wretched	Do.	6	11
M. K.	1	Do.	Practically dying	Do.	6	8
K. B.	At birth	Do.	Delicate	Do.	4	2
P. C.	1	Do.	Acute Bronchitis	Do.	7	10
P. M.	13	Weaning necessary	Delicate	Do.	3	1
P. O'B.	3	Milk left	Whooping cough	Fair	5	2
M. O'N.	6	Inflamed breast	Delicate	Improved	5	5
T. R.	10	Weaning necessary	Fair	Do.	2	2
J. J. B.	1	Milk left	Delicate	Much improved	5	3
W. B.	4	Do.	Do.	Do.	4	4
M. B.	$6\frac{1}{2}$	Enteric	Do.	Do.	4	4
J. K.	$\frac{1}{2}$	Abscess on breast	Very delicate	Do.	5	4
C. V.	3	Child in hospital	Do.	Do.	4	5
M. B.	2	Milk left	Fair	Do.	4	$5\frac{1}{2}$
C. C.	12	Weaning necessary	Delicate	Do.	3	4
M. P.	13	Do.	Very delicate	Do.	4	4
O. M.	9	Abscess on breast	Do.	Do.	2	$4\frac{1}{2}$
A. B.	1	Milk left	Wretched	Do.	2	2
M. F.	3	Mother delicate	Do.	Do.	2	3
J. N.	2	Do.	Do.	Do.	2	3
M. R.	At birth	Mother died at birth	Do.	Do.	2	3
A. R.	2	Milk left	Do.	Do.	2	3
E. S.	1	Sore breast	Do.	Do.	2	3
A. G.	3	Do.	Do.	Do.	2	3
T. D.	At birth	Milk left	Delicate	Improved	2	2
P. D.	Twin	Do.	Do.	Do.	2	2
R. S.	1	Do.	Do.	Do.	2	$2\frac{1}{2}$
B. B.	1 fort-night	Nurse died	Vomiting and diarrhœa	Very good	6	7
C. D.	11 wks.	Milk went	Do.	Improved	less than a month	1

Baby	Age Weaned	Why Weaned by Mother	CHILD'S CONDITION		Period getting P. Milk	Gain in Weight
			When Weaned	At Present		
F.	5 wks.	Sore breast	Green stools	Excellent	Months 7	lbs. 9
F.	Since birth	Milk went	Do.	Very good	3	3½
N. G.	Do.	Mother delicate	Poor goitre	Much improved	1	1½
H.	Do.	Child refused breast	Premature	Do.	1, & 3 days	2
R. L.	Months 7	Not entered	Do.	Do.	Months 3	1
J. L.	7	Breast milk failed	Systolic murmur	Improved, murmur still present	10	11
E. L.	2	Not sufficient milk	Poor	Very good	2	1lb. 3ozs.
M.	3	Do.	Do.	Do.	5	lbs. 9
P. M.C.	4	Do.	Do.	Improved	2	2
N.	10 days	Mother had hæmorrhage	Do.	Do.	5	2½
O'N.	Since birth	No breast milk	Wretched. Brought in on a cushion	Excellent	9	12
O'C.	1 mth.	Not sufficient milk	Poor	Good	3	1½ lbs.
R.	1 week	Breast abscess	—	—	1 week	4 ozs.
S.	Months 1	Not sufficient milk	—	—	Months 1	lbs. 1
G.	2	Do.	—	—	3	5
W.	2	Do.	Very wretched. Vomiting	Excellent	2	5
M.	1 fort-night	Breast milk failed	Poor	Greatly improved	3	1½

The number of children with whom the milk apparently did not agree was nine. Of these three died. Two of these deaths were from marasmus, the third was quite sudden (in a baby who was apparently improving) from miliary tuberculosis. The child's father had died from the pulmonary form of the same disease on the previous day. Of the remaining six babies with whom the milk did not agree, two had syphilis, and the other four were put on other diets as they continued to lose in weight.

In addition to the foregoing, fifty-two babies took the milk for periods of time too short to make any record. This condition of things is, of course, unsatisfactory, but is partly to be accounted for in two ways—first, the fact that many mothers

cannot afford to continue buying the humanised milk when the worst symptoms in the baby for which they tried it were over. To aid the very poor in this respect the Depôt issues tickets, which can be bought by charitable societies or individuals, and given to the poor mothers, and many have been helped in this way, but, of course, their use cannot extend to all the poor. The second reason for several babies having been put on the milk for a short time is the presence in the neighbourhood of a Military Barracks, with its changing occupants, but, of course, many of the unsatisfactory cases are due to the most unsatisfactory of causes, that the mothers do not care enough to take the trouble of fetching the milk for a long time.

With regard to the foregoing table of results, it is, of course, hard to judge with any scientific accuracy how far the babies benefit by the actual pasteurisation of the milk. There is no doubt that much of the steady improvement which is seen in the condition of the children is due to increased regularity of feeding and suitable strength of milk which is helped by the method of dispensing each feed in a separate bottle, and also by constant medical supervision and advice. On the other hand, in some cases the pasteurised milk has a slightly constipating effect, when this occurs the mothers are advised what steps to take to relieve this trouble. Our statistics, however, are misleading, owing to the fact that it is generally the weakest and sickliest babies that are brought to the Depôt for milk—often as a last resource. A careful watch is kept for signs of rickets or tubercular disease, but it will not be for some years that any report on the incidence of these diseases will be of any real value.

The two great virtues we try to inculcate are *regularity* and *cleanliness*, and any method for bringing the mothers of the poorer classes together and impressing on them the necessity for these things, ought to bear fruit—if not immediately, at any rate in the future.

SANITARY AND METEOROLOGICAL NOTES.

VITAL STATISTICS.

For four weeks ending Saturday, December 4, 1909.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended December 4, 1909, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 20.1 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,142,308. The deaths registered in each of the four weeks ended Saturday, December 4, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality:—

TOWNS, &c.	Week ending				Average Rate for 4 weeks	TOWNS, &c.	Week ending				Average Rate for 4 weeks
	Nov. 13	Nov. 20	Nov. 27	Dec. 4			Nov. 13	Nov. 20	Nov. 27	Dec. 4	
22 Town Districts	19.2	20.0	21.0	20.1	20.1	Lisburn	22.7	27.3	27.3	13.6	22.7
Armagh	20.6	27.5	13.7	—	15.5	Londonderry	12.1	23.0	13.3	23.0	17.9
Ballymena	14.4	23.9	19.2	9.6	16.8	Lurgan	13.3	13.3	13.3	8.9	12.2
Belfast	17.5	18.1	22.5	19.8	19.5	Newry	29.4	25.2	21.0	21.0	24.1
Clonmel	5.1	5.1	15.4	10.3	9.0	Newtown-ards	28.6	11.4	28.6	22.9	22.9
Cork	20.5	21.9	26.0	25.3	23.4	Portadown	31.0	15.5	10.3	5.2	15.5
Drogheda	4.1	4.1	20.4	12.3	10.2	Queenstown	6.6	19.8	19.8	—	11.6
Dublin (Reg. Area)	21.7	23.6	20.7	22.1	22.0	Sligo	19.2	14.4	19.2	19.2	18.0
Dundalk	12.0	12.0*	16.0	12.0	13.0	Tralee	26.4	5.3	5.3	31.7	17.2
Galway	15.5	3.9	27.2	27.2	18.5	Waterford	21.4	11.7	25.3	19.5	19.5
Kilkenny	9.8	29.5	19.7	24.6	20.9	Wexford	23.3	32.7	14.0	9.3	19.8
Limerick	20.5	17.8	16.4	13.7	17.1						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, December 4, 1909, were equal to an annual rate of 1.0 per 1,000, the rates varying from 0.0 in fourteen of the districts to 5.3 in Tralee, the 6 deaths from all causes for that district including one from whooping-cough. Among the 147 deaths from all causes registered in Belfast are 6 from whooping-cough, one from diphtheria, and 3 from diarrhœal diseases. Of the 37 deaths from all causes registered in Cork is one each from enteric fever and diarrhœa. Of the 10 deaths from all causes registered in Limerick, 2 are from whooping-cough, and one of the 10 deaths from all causes registered in Waterford is from whooping-cough.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 398,356, that of the City being 306,902, Rathmines 36,567, Pembroke 28,506, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, December 4, 1909, amounted to 206—112 boys and 94 girls; and the deaths to 180—94 males and 86 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 23.6 in every 1,000 of the population. Omitting the deaths (numbering 11) of persons admitted into public institutions from localities outside the Area, the rate was 22.1 per 1,000. During the forty-eight weeks ending with Saturday, December 4, the death-rate averaged 22.0, and was 2.6 below the mean rate for the corresponding portions of the ten years 1899–1908.

The total deaths included one death from diphtheria, 2 deaths of infants under one year of age from epidemic enteritis, 3 deaths from influenza, and one death from enteric fever. The deaths of 2 infants under one year of age from enteritis and one from *gastro-enteritis* were also registered. In each of the three preceding weeks deaths from diphtheria had been one, 2, and one; deaths from enteric fever had been one, 0, and one; deaths

from diarrhoeal diseases had been 4, 2, and 4; and deaths from influenza had been 2, one, and 2.

There were 11 deaths from broncho-pneumonia, one death from lobar pneumonia, and there were 8 deaths from *pneumonia* (not defined).

The deaths (29) from all forms of tuberculous disease include 22 from tubercular phthisis (*phthisis*), 2 from tubercular meningitis, one death from tubercular peritonitis, and 4 deaths from other forms of the disease. Deaths from all forms of tuberculous disease in the three preceding weeks had been 28, 26, and 23 respectively.

There were 5 deaths from carcinoma, one death from sarcoma, and 5 from cancer, malignant disease (undefined).

Of 10 deaths attributed to diseases of the brain and nervous system, 3 were those of infants under one year of age from *convulsions*.

Diseases of the heart and blood-vessels caused 31 deaths, and bronchitis caused 24 deaths.

Of 5 deaths attributed to accident or negligence, one was by a vehicle, one by burns, and one by drowning.

In three instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 2 infants under one year of age, and the death of one female, aged 74 years.

Forty-two of the persons whose deaths were registered during the week were under 5 years of age (29 being infants under one year, of whom 4 were under one month old), and 60 were aged 60 years and upwards, including 35 persons aged 70 and upwards, of whom 8 were octogenarians, and 2 (a male and a female) were stated to have been aged 90 and 91 years respectively.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," and the "Tuberculosis Prevention (Ireland) Act, 1908," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health

for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. R. A. O'Donovan, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Bailie, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended December 4, 1909, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain) ^a	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Whooping-cough	Cerebro-spinal Fever	Tubercular Phthisis (<i>Phtisis</i>)	Total
City of Dublin	Nov. 13	-	*	*	7	-	-	11	-	1	6	9	-	*	-	17	51
	Nov. 20	-	*	*	4	-	-	18	-	1	15	5	-	*	-	18	63
	Nov. 27	-	*	*	*	-	-	6	-	2	12	15	-	*	-	21	53
	Dec. 4	-	*	*	10	-	-	10	-	-	1	9	-	*	-	12	48
Rathmines and Rathgar Urban District	Nov. 13	-	*	*	6	-	-	1	-	-	1	-	-	*	*	*	8
	Nov. 20	-	*	*	5	-	-	2	-	-	-	-	-	*	*	*	7 ^b
	Nov. 27	-	*	*	2	-	-	-	-	-	-	2	-	*	*	*	4 ^b
	Dec. 4	-	*	*	2	-	-	2	-	-	1	2	-	*	*	*	13
Pembroke Urban District	Nov. 13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-
	Nov. 20	-	-	-	1	-	-	-	-	-	-	-	-	1	-	*	4
	Nov. 27	-	-	-	1	-	-	-	-	-	-	-	-	-	-	*	1
	Dec. 4	-	-	-	1	-	-	-	-	-	-	-	-	-	-	*	1
Blackrock Urban District	Nov. 13	-	*	*	-	-	-	-	-	-	-	-	-	*	-	*	-
	Nov. 20	-	*	*	-	-	-	-	-	-	-	-	-	*	-	*	-
	Nov. 27	-	*	*	-	-	-	-	-	-	-	-	-	*	-	*	-
	Dec. 4	-	*	*	-	-	-	-	-	-	-	-	-	*	-	*	-
Kingstown Urban District	Nov. 13	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Nov. 20	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Nov. 27	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Dec. 4	-	*	*	1	-	-	-	-	-	-	1	-	*	*	*	2
City of Belfast	Nov. 13	-	*	*	20	-	-	5	-	2	1	7	-	*	-	26	64
	Nov. 20	-	*	*	13	-	-	3	-	-	3	2	1	*	-	41	63
	Nov. 27	-	*	*	21	-	-	3	-	-	-	9	-	*	-	23	56
	Dec. 4	-	*	*	13	-	-	4	1	1	5	-	-	*	-	17	41

^a Continued Fever.

^b Not including 2 cases of choleraic diarrhoea as returned.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended December 4, 1909, one case of measles was admitted to hospital, and 7 cases remained under treatment at its close.

Twenty cases of scarlet fever were admitted to hospital, 24 were discharged, and 94 cases remained under treatment at the close of the week. This number is exclusive of 23 convalescents from the disease under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital. At the close of the 3 preceding weeks the cases in hospital had been 93, 94, and 98 respectively.

One case of typhus was discharged from hospital during the week, and four cases remained under treatment in hospital at its close.

Seven cases of diphtheria were admitted to hospital, 12 were discharged, and 43 patients remained under treatment at the close of the week. The cases in hospital at the close of the 3 preceding weeks had numbered 57, 45, and 48 respectively.

Six cases of enteric fever were admitted to hospital during the week, 6 were discharged, there was one death, and 48 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 13 cases of pneumonia were admitted to hospital, 6 were discharged, there was one death, and 40 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, December 4, in 76 large English towns, including London (in which the rate was 16.0), was equal to an average annual death-rate of 16.5 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 22.3 per 1,000, the rate for Glasgow being 27.3 and for Edinburgh 19.5.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended December 4. From this Report it appears that of a total of 76 cases notified, 37 were of scarlet fever, 19 of phthisis, 12 of diphtheria, 7 of erysipelas, and one of puerperal fever.

Among the 458 cases of infectious diseases in hospital at the close of the week were 259 cases of scarlet fever, 78 of measles, 43 of phthisis, 19 of whooping-cough, 39 of diphtheria, 2 of enteric fever, 9 of erysipelas, 4 of chicken-pox, and one of cerebro-spinal fever.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. $53^{\circ} 20'$
N., Long. $6^{\circ} 15' W.$, for the Month of November, 1909.*

Mean Height of Barometer,	-	-	30.040 inches.
Maximal Height of Barometer (24th, at 9 a.m.),			30.503 „
Minimal Height of Barometer (29th, at 9 p.m.),			29.075 „
Mean Dry-bulb Temperature,	-	-	42.1° .
Mean Wet-bulb Temperature,	-	-	40.1° .
Mean Dew-point Temperature,	-	-	37.6° .
Mean Elastic Force (Tension of Aqueous Vapour),			.230 inch.
Mean Humidity,	-	-	84.3 per cent.
Highest Temperature in Shade (on 3rd),	-		56.8° .
Lowest Temperature in Shade (on 16th),	-		28.2° .
Lowest Temperature on Grass (Radiation) (16th),			22.9° .
Mean Amount of Cloud,	-	-	55.3 per cent.
Rainfall (on 14 days)	-	-	1.425 inches.
Greatest Daily Rainfall (on 13th),	-	-	.664 inch.
General Direction of Wind,	-	-	W., S.W., W.N.W.

Remarks.

A cold, but generally fine, month, with a deficient rainfall. The cold was very intense at times in the centre of Ireland, in which district also some sharp alternations of cold and warmth occurred—for example, the thermometer at Birr Castle stood at 26° at 8 a.m. of the 1st, but at 50° twenty-four hours later. In the week ended on the 6th temperature differed little from the normal—the 3rd was a very warm day, the thermometer rising to 61° at Roche's Point, Cork, and at Waterford. Temperature was much below the average in the second and third weeks—the deficit in the latter period being 8° over the southern half of Ireland, 8.7° in the N.W. of England, 9.6° in the N. of Scotland, and no less than 11.6° in the E. and W. of Scotland. At Balmoral the thermometer fell to 3° on the 16th, on which day a minimum of 13° was recorded at Markree, Co. Sligo. The lowest grass readings reported were 5° at Crathes, zero at Balmoral, and 8° at Markree Castle. Temperature remained low until Thursday, the 25th, when large and deep depressions began to spread in from the Atlantic, carrying with them warm, moist S.W. winds. At 7 a.m. of the 29th the barometer was

down to 28.42 inches at Reykjavik, in Iceland, whereas it read 30.19 inches at Lyons. A strong S.W. wind swept, in consequence, over the British Isles, and rain fell in most districts.

In Dublin the arithmetical mean temperature (43.0°) was 2.3° below the average (45.3°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 42.1° . In the forty-five years ending with 1909, November was coldest in 1878 (M. T. = 38.2°), and in 1870 (M. T. = 42.2°); warmest in 1899 (M. T. = 50.7°). and in 1881 (M. T. = 50.3°). In 1908 the M. T. was 48.1° .

The mean height of the barometer was 30.040 inches, or 0.180 inch above the corrected average value for November—namely, 29.860 inches. The mercury rose to 30.503 inches at 9 a.m. of the 24th, and fell to 29.075 inches at 9 p.m. of the 29th. The observed range of atmospheric pressure was, therefore, 1.428 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 42.1° , or 8.1° below the value for October, 1909. The arithmetical mean of the maximal and minimal readings was 43.0° , compared with a thirty-five years' (1871–1905) average of 45.3° . On the 3rd the thermometer in the screen rose to 56.8° —wind, W.; on the 16th the temperature fell to 28.2° —wind, N.W. The minimum on the grass was 22.9° on the 16th.

The rainfall was 1.425 inches on 14 days—the rainfall and rain-days were much below the average. The average rainfall for November in the thirty-five years, 1871–1905, inclusive, was 2.720 inches, and the average number of rain-days was 17. In 1888, 6.459 inches fell on 26 days. On the other hand, the rainfall in 1896 was only .664 inch on 9 days. In 1908 the rainfall was 1.237 inches on 12 days.

High winds were noted on 6 days, but never attained the force of a gale. The atmosphere was more or less foggy in Dublin on the 22nd and 25th. There was an aurora borealis on the 7th. A solar halo was seen on the 1st and again on the 8th. Lunar halos appeared on the 20th, 26th, 27th and 30th. Lightning was seen on the evenings of the 7th and 10th. Hail fell on the 14th, 15th, and 16th; snow and sleet, on the 14th and 15th.

The rainfall in Dublin during the eleven months ending Nov. 30th amounted to 22.531 inches on 172 days, compared with 15.378 inches on 141 days during the same period in 1887, 24.086 inches on 156 days in 1901, 27.812 inches on 190 days in 1902, 30.015 inches on 212 days in 1903, 20.678 inches on 172 days in

1904, 24.013 inches on 180 days in 1905, 21.001 inches on 185 days in 1906, 24.845 inches on 196 days in 1907, 22.013 inches on 179 days in 1908, and a thirty-five years' average of 25.750 inches on 181 days.

At the Normal Climatological Station in Trinity College, Dublin, Mr. William J. Good reports that the mean height of the barometer was 30.041 inches, the range of atmospheric pressure being from 30.507 inches at 9 a.m. of the 24th to 29.074 inches at 9 p.m. of the 29th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 42.8° . The arithmetical mean of the daily maximal and minimal temperatures was 43.5° . The screened thermometers rose to 57.6° on the 3rd, and fell to 28.8° on the 16th. On the 16th also the grass minimum was 20.1° . Rain fell on 10 days to the amount of 1.302 inches, the greatest fall in 24 hours being .680 inch on the 13th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 61.4 hours, of which 5.7 hours occurred on the 7th. The mean daily sunshine was 2.0 hours. The mean temperature of the soil at 9 a.m. was 43.5° at a depth of 1 foot; at a depth of 4 feet it was 48.0° .

At Cloneevin, Killiney, Co. Dublin, Mr. Robert O'B. Furlong, C.B., states that 1.20 inches of rain fell on 10 days, compared with a twenty-four years' (1885-1908) average of 2.880 inches on 16 days. The maximal fall in 24 hours was .71 inch on the 13th. Since January 1, 1909, 20.99 inches of rain have fallen at this station on 154 days. The corresponding figures for 1901 were 26.10 inches on 161 days; 1902, 30.18 inches on 178 days; 1903, 30.05 inches on 203 days; 1904, 20.39 inches on 166 days; 1905, 25.95 inches on 167 days; 1906, 20.22 inches on 183 days; 1907, 23.71 inches on 182 days; and 1908, 23.30 inches on 176 days.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall was 1.920 inches on 11 days. Of the total quantity 1.160 inches fell on the 13th.

At Clonsilla, Greystones, Co. Wicklow, Dr. Arthur G. Price measured 1.76 inches of rain on 10 days, the heaviest fall in 24 hours being 1.03 inches on the 13th. The mean temperature was 44.0° , the maximum being 61° on the 2nd, and the minimum 28° on the 23rd.

Dr. Launcelot T. Burra reports a rainfall of 1.91 inches on 12

days at the Royal National Hospital for Consumption for Ireland, Newcastle, Co. Wicklow. The greatest fall in 24 hours was .95 inch on the 13th. The mean temperature for the month was 43.3° , the maximum being 62.0° on the 3rd, and the minimum 29.0° on the 24th. The mean dry bulb reading at 9 a.m. and 9 p.m. was 44.1° .

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 16 days to the amount of 1.46 inches, the greatest measurement in 24 hours being .66 inch on the 13th. In November, 1901, the rainfall was 3.53 inches on 8 days; in 1902, it was 4.61 inches on 17 days; in 1903, 1.93 inches on 14 days; in 1904, 1.26 inches on 11 days; in 1905, 4.35 inches on 22 days; in 1906, 1.60 inches on 15 days; in 1907, 3.10 inches on 19 days, and in 1908, 1.56 inches on 16 days. The mean temperature in the shade was 42.2° , the range being from 56° on the 4th and 5th to 26° on the 16th.

Dr. Christopher Joynt, F.R.C.P.I., registered 1.390 inches on 15 days at Leeson Park, Dublin. The maximum in 24 hours was .640 inch on the 13th. In November, 1905, 3.795 inches of rain had been recorded at this station, in 1906, 1.485 inches, in 1907, 2.810 inches, and in 1908, 1.315 inches.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 1.155 inches on 10 days—the greatest fall in 24 hours being .565 inch on the 13th. The mean shade temperature was 38.9° , the extremes being—highest, 53° on the 2nd; lowest, 22.5° on the 22nd.

In the City of Cork Mr. William Miller returns the rainfall at 0.76 inch, or 3.12 inches less than the average for November. There were only 9 rain-days. The heaviest fall in 24 hours was .35 inch on the 30th. Up to November 30th, the rainfall of 1909 amounted to 26.45 inches—that is, 7.52 inches less than the average for the first eleven months of the year.

At Dunmanway Rectory, Co. Cork, the Rev. Arthur Wilson, M.A., registered a rainfall of 1.80 inches on 12 days, the heaviest fall in 24 hours being .47 inch on the 30th. An unusually bright fine month, with very cold nights and mornings. Only .25 inch of rain fell up to the 25th, and there was a drought from the 13th to that date. Thunder was heard on the 27th.

Mr. William Holbrow reports a rainfall of 2.03 inches on 8 days at Derreen, Kenmare, Co. Kerry. The heaviest fall in 24 hours was .78 inch on the 26th. Hard frost prevailed from the 11th to the 24th, the minimum being 11° on the 23rd.

At the Ordnance Survey Office, Phoenix Park, Dublin, rain fell on 16 days to the amount of 1.488 inches, the largest measurement in 24 hours being .700 inch on the 13th. The total amount of sunshine was 89.6 hours, the most in one day being 7.2 hours on the 6th.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

At the meeting of the College held on December 11, 1909, the following gentlemen were elected Fellows:—Edmund Cecil Bevers, M.B., M.R.C.S. Eng., L.R.C.P. Lond., Oxford; Harry Haward Bywater, M.B., Ch.B. Preston; Arthur John Evans, M.R.C.S. Eng., L.R.C.P. Lond., Liverpool; William Aiken Fairclough, M.B., M.R.C.S. Eng., L.R.C.P. Lond., Dunedin, New Zealand; William Girdwood, M.B., Ch.B., D.P.H., Transkei, Cape Colony; John Parlane Granger, L.R.C.S.E., Glasgow; Rowland Hill Harris, L.R.C.S.E., Battle Creek, Michigan, U.S.A.; Robert Beatson Dennis Hird, M.D., M.R.C.S. Eng., L.R.C.P. Lond., Birmingham; James Husband, M.B., Ch.B., Captain, Indian Medical Service; Arthur William Bligh Livesay, M.B., C.M., Staff Surgeon, Royal Navy; Thomas Richard M'Kenna, L.R.C.S.E., Edinburgh; Henry John M'Lean, M.B., Ch.B., Wellington, New Zealand; Samuel Wilson M'Lellan, M.D., West Kirby, Cheshire; John Morris, M.B., Ch.B., Llanymynech, Montgomeryshire; William John Morton, M.D., L.R.C.S.E., Inverell, New South Wales; Anath Nath Palit, L.R.C.S.E., London, W.; James Raffan, M.D., Aberdeen; James Mill Renton, M.B., Ch.B., Glasgow; James Russell, M.B., Ch.B., Glasgow; Clinton Pelham Sapsford, M.B., Ch.M., Toowong, Queensland; Charles Johnston Smith, M.B., Ch.B., Edinburgh; George M'Call Smith, M.B., Ch.B., Perth; John Alfred Macdonald Smith, M.B., Ch.B., Naogoan, E. Bengal; Walter Taylor, M.B., M.R.C.S. Eng., L.R.C.P. Lond., Ontario, Canada; and Owen Herbert Williams, M.B., Ch.B., Liverpool.

PERISCOPE.

THE LATE ROYAL UNIVERSITY OF IRELAND.

THE Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland have had under consideration the position of medical students who have taken out some of their examinations in the late Royal University of Ireland, and who may desire to carry on their studies and to take their qualifications under the Conjoint Scheme for Ireland. The Royal Colleges have decided that candidates for examination under the Conjoint Scheme who have obtained exemption from examination in certain subjects by reason of their having, prior to the 1st of November, 1909, passed in such subjects at some University or other Licensing Body, be excused from payment of half the fees for the examination, or division of examination, from which they have been exempted.

LITERARY NOTE.

A NEW series of "National Health Manuals" is being prepared under the able editorship of Dr. T. N. Kelynack, whose name will be sufficient guarantee that the work will be of the best. All forms of social effort and enterprise in so far as they touch medico-sociological problems will be dealt with. Each chapter in every volume will be written by a well-known medical expert. The series, which will consist of twelve volumes, will be issued by Robert Cully. The first volume, dealing with "Infancy," will be issued early in the new year.

IS DISSEMINATED SCLEROSIS AN ACUTE INFECTION?

THE ætiology of insular or disseminated sclerosis has long been as obscure as the symptoms of that protean disease are apt to be perplexing. A case which came to autopsy recently in Paris is the subject of a careful report by Guiéva-Rajes, who is a worker under Raymond at the Charcot clinic of the Salpêtrière. The patient died during an acute exacerbation of his disease, and in his brain and spinal cord were found not only the usual sclerosed plaques from which the French name of the disease has been taken, but also reddish, softer, less sharply defined patches. These, on microscopic examination, were seen to be definitely in-

flammatory, a leucocytic exudate being a prominent feature. The glia and the myelin sheath of the nerve fibres were extensively broken down, but the axis cylinders were comparatively unaffected. The extent and distribution of these zones corresponded roughly with those of the typical older patches of sclerosis, and the inference is that the newer plaques were responsible for the exacerbation of symptoms which the patient had exhibited. It seems, at any rate, reasonable to assume this, and also to argue in favour of a microbic origin for the disease: it is clear that this conception, if it turns out to be based on a solid foundation, may open up possibilities for the future of much greater success in the treatment of disseminated sclerosis than has ever been attained in the past.—*The Hospital*, December 18, 1909.

MEDITERRANEAN FEVER (MALTA FEVER).

IN *Notes on Medical Geography and Mortality Statistics* ("Janus," Harlem, 1909, De Erven F. Bohn), R. T. Williamson, M.D., F.R.C.P., F.R.G.S., Assistant Physician Royal Infirmary, Manchester, observes that the use of goat's milk in food is now regarded as the most common cause of this disease. The milk of goats in Malta has been found infected with the *Micrococcus melitensis* (of Bruce). In 1906-7 precautions were taken against milk infection in the Garrison of Malta, with the result that there was a diminution of the number of cases in the latter half of the year, and a much greater diminution the following year, whilst amongst the civil population of Malta the diminution has been insignificant. The health reports of Malta show the following striking figures^a:—

	Garrison	Civil population
Average yearly number of cases for the period 1899-1905	315	676
Number of cases for the year 1906-7 ...	159	714
Number of cases for the year 1907-8 ...	11	501

The results obtained through elimination of milk infection in the Fleet are equally striking. The number of cases of Mediterranean fever contracted in Malta was 200 in 1904-5, and 250 in 1905-6. After the precautions were taken as regards milk the cases diminished to 52 in 1906-7, and to 7 in 1907-8. Out of 1,203 samples of milk examined, 170 were found to be infected.

^a See Annual Report of Public Health Department, 1907-8, Malta, 1909.

In Memoriam.

SIR WILLIAM THOMSON, C.B., M.A., M.D., M.Ch., R.U.I. ;

EX-PRES. R.C.S.I., HON. SURG. IN IRELAND TO H. M. THE KING.

IN our last issue we mentioned briefly the death of SIR WILLIAM THOMSON, which occurred on Nov. 13, 1909—too close to our time of going to press for the preparation of a notice adequate to the merits of so distinguished a member of the surgical profession. The lapse of time since the sad event has thrown into bolder relief the importance of the man lost to Ireland, and enables us to view his life and character in their true perspective.

Born in Ireland, in 1843, of Scotch parents, his circumstances compelled him to make a career for himself. At Queen's College, Galway, he distinguished himself as a student both in Arts and in Medicine, while making some of those loyal and life-long friendships for which his character seemed to be formed.

His literary education led him for a time into journalistic work, in which, had he continued his connection with it, he undoubtedly would have made a high reputation. But Medicine attracted him more strongly, and after a very few years we find him Resident Surgeon in the Richmond Hospital, Dublin.

Here came the opportunity of his life—a vacancy on the surgical staff. The young Resident Surgeon was recognised by the Board of Governors and the Medical Staff as the most suitable of all comers for the post of Visiting Surgeon. From that date surgery and his hospital claimed all his devotion. He worked as a student in his wards from the day of his appointment till within three or four months of his death, never sparing himself either in the care of his patients or in the instruction of his pupils.

During the years which followed he constantly contributed to the medical journals, and edited Power's work on the Arteries. This was no casual incursion into book-making, for he had shown unusual boldness himself in the ligation of the great arteries of the trunk. He adopted with ease every advance in surgery, and up to the beginning of his last illness was recognised as the chief exponent in Ireland of the operation of prostatectomy—associated with the name of his friend and fellow-student, Mr. Freyer.

In Memoriam.

But THOMSON's intellectual powers were too great to be satisfied with the details of individual professional work. In the broader interests of the profession, and of Irish education in general, his interests were early aroused. He threw himself with characteristic tenacity into the struggle for the amelioration of the lot of the Poor Law Medical Officers, and the best statement of their grievances which has ever been issued came from his pen. Not unnaturally he was returned by a huge majority as the Representative of the medical profession in Ireland to the General Medical Council, and in this position he showed himself an able debater, a clear-headed counsellor, and a staunch upholder of the interests of the whole profession in Ireland.

The graduates of the Royal University elected him one of their representatives on the Senate, a body which he later on adorned as a nominee of the Crown.

THOMSON was a good Irishman, and at the same time a strong upholder of the Empire; and thus when in 1899 the shock and shame of defeat came for the first time for well-nigh a century on the arms of Britain, and when the weakness of the medical organisation of the Army became all too evident, he was enabled by the patriotic munificence of Lord Iveagh to organise the Irish Hospital Corps.

The Irish Hospital, as it was called, was second to none in efficiency, and frequently called forth the praises of Lord Roberts, the Commander-in-Chief. The success of the Irish Hospital was mainly due to the foresight, the organising skill, and the administrative capacity of SIR WILLIAM THOMSON, who, after the war, was honoured by the Companionship of the Bath at the hands of His Majesty the King. He had already been knighted during his Presidency of the Royal College of Surgeons in the year 1897, and on the accession of King Edward VII. he was appointed Surgeon to His Majesty the King in Ireland.

Looking back on a life of great activity, and one marked by many distinctions, we believe that SIR WILLIAM THOMSON himself would have selected his labour in the Richmond Hospital as itself his best work and his highest reward. We have touched on his clinical enthusiasm, but his hospital owes him a debt of gratitude for much more than that. For twenty-five years of his connection with it he had to work in an old building, with high and illustrious traditions, but utterly unsuited to the requirements of modern surgery. To most men it would have been natural to accept the inevitable and make the best of what seemed irremediable. But SIR WILLIAM THOMSON was of such stuff as is never

In Memoriam.

content with second best; and some fifteen years ago he began to press upon the Governors of the Richmond Hospital the necessity of taking their courage in their hands and starting the building of a new surgical wing. His enthusiasm, groundless as it seemed at first, became infectious; it caught men who had hardly known the hospital till then, and within six years he saw the new surgical block opened on freshly-purchased ground. That surgical wing is the real and permanent monument to SIR WILLIAM THOMSON. For ten years past he has enjoyed the promised land for which he had yearned and striven so long, and to which he—and, one may fairly say, he alone—was able to lead the way.

In 1878 SIR WILLIAM married Margaret Dalrymple, daughter of the late Abraham Stoker, of Dublin, and sister of Sir Thornley Stoker. By her he had two children, a son and daughter, who survive him. The elder is Captain Douglas B. Thomson, a Graduate in Arts and Medicine of the University of Dublin. He is now attached to the Egyptian Army, and is stationed at Khartoum.

The prolongation of SIR WILLIAM'S life in the face of the grave disease from which he suffered—chronic nephritis with heart complications—was in no small measure due to the loving devotion, the untiring attention by night as well as by day, and the resourceful skill with which he was nursed by Lady Thomson through many long and dreary months of illness.

Those who knew SIR WILLIAM THOMSON in the ordinary intercourse of professional life will remember his clean-cut features, his courteous and thoroughly manly bearing, his keen insight into the merits of the question before him, whether it were a surgical case or a broad professional issue. Those who knew him more intimately, and his hospital colleagues especially, mourn him as a dear particular friend, whose gentleness, sympathy, and unselfishness made him the model in their eyes of all that the best of colleagues could be. They most of all know their debt to him for the courage which inspired their's, the wise counsel, which often softened wrath, and the enthusiasm, which never paled, for the fair fame of his and their hospital.

J. B. C.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. III.—*Medical Education: A Criticism and a Scheme.*^a By HENRY T. BEWLEY, M.D., F.R.C.P.I.;
Lecturer on Forensic Medicine and Hygiene in Trinity
College, and Physician to the Adelaide Hospital,
Dublin.

I HAVE had occasion from time to time, in connection both with the Medical School of Trinity College, Dublin, and with the Conjoint Scheme in Ireland of the Royal Colleges of Physicians and Surgeons, to devote some attention to the subject of Medical Education, but I never was rash enough to put my views on paper until this present session. What induced me to do so was this:—At the Adelaide Hospital it fell to my lot this past autumn to teach the Junior Class—*i.e.*, the men who, having spent one year at a medical school, are now beginning their second year's work in the school, and their first year's attendance at hospital. It fell to my lot to teach the Junior Class the facts relating to the heart and its diseases. At the second meeting of the class I was about to tell them of murmurs and such like, but before I did so I asked them if they understood something of the physiology of the heart, the causes of the sounds, the

^a A Paper read before the Dublin Biological Club on December 14, 1909.

nature of the impulse. Whereupon they all declared they knew nothing of the physiology of the heart, and said that they had never been taught it. When I was a student, thirty years ago, in the days of the four years' course, such a state of affairs would have been quite natural. A man joined the medical school yesterday, and began his hospital course to-day. But when it was settled that students should spend a year in the school before joining their hospital, I understood that this arrangement was made with the intention that they might be the better able to profit by what they saw and heard in hospital, and that the time both of students and teachers might be employed to more advantage. But yet, here are men coming in their second year to hospital and needing to be taught there the rudiments of knowledge concerning the heart's action before they can understand the simplest clinical teaching. Surely this is not right. Hence this paper.

And I must first ask your indulgence for the frequent appearance in it of the first personal pronoun. I cannot keep myself out of a paper which represents only my own private views, and I trust you will excuse the personal (perhaps egotistic) tone.

My practical knowledge of curriculums is confined to those of Trinity College and of the Conjoint Scheme of the Royal Colleges. I have no personal acquaintance with the courses in the Royal and National Universities. Hence this paper is based mainly on my knowledge of the first two curriculums; but much of it applies to all the licensing bodies in Dublin.

In arranging a curriculum for a medical student we should arrange it in accordance with certain principles. These should first be settled, as the details of the courses will depend on them. These principles are, in my opinion, the following:—

(1) We must legislate for the average student, not for the clever man who can pass every examination, nor yet

for the dull man who never can pass any examination; but for the average man; and if we say— and if we so arrange our curriculum— that the course shall be a five years' course, we should make it possible for the average man to become qualified in five years. Statistics seem to show that this is not the case at present.

(2) The total mass of knowledge of matters connected directly or indirectly with medical studies is now so immense that it is impossible to teach a student all that we should like him to know. We must, therefore, make a selection. On what principle should this selection be made? I say that we should make our selection after this manner:—We should teach a student such things as he is likely to remember in his subsequent life. And what things is he likely to remember? Those things, I answer, which have a practical bearing on his profession. (This principle is, I think, the most important part of this paper.) I appeal to my fellow members of the Biological Club—Are we not all conscious that we as students learned very many things which we have entirely forgotten? And are we sure that we are very much worse practitioners for having forgotten them?

Of course, I know that all knowledge is advantageous; but our minds—even ours—are incapable of retaining more than a certain amount. (I assume that intellectually the average of this Club is fully up to the general average of the profession.) In our minds a process of the survival of the fittest has taken place, and we have dropped that which we found to have no practical bearing on our life-work in order to make room for what is more useful. It, therefore, appears to me that to force students to learn what they will forget as soon as the examination is over is not only useless—it is an unjustifiable waste of the students' valuable time—unjustifiable because they are thereby prevented from learning other things which would be useful, and which consequently would be remembered.

But it will be said—We must give students a scientific

training: practical matters relating to medical work they may be trusted to learn for themselves afterwards; but if they are not given a scientific training while students they will never afterwards study such subjects. To this I answer—Perfectly right, if only you can succeed in giving a scientific training to students. But can you succeed?

Teaching a certain amount of science is one thing; giving a scientific training is a very different thing. If it were possible to give a scientific training to the average student no one would approve it more highly than I; but I appeal to the experience of each of us:—Does the average student become more scientifically-minded, does his mind really become scientifically trained by the amount of scientific facts and methods which we can teach him? I do not think our endeavours are successful. The student becomes no more scientifically-minded, and as a matter of fact forgets most of his “scientific training” as soon as the examination is over; but—and this is the serious thing—he has spent much valuable time in making up the subjects for this examination.

I, therefore, repeat that our curriculums should be so arranged that a student will be taught almost exclusively those subjects, or parts of subjects, which have a direct bearing on the practice of his profession, which he will find useful in his after life, and which he will have some chance of being able to remember.

Having laid down these two principles, I will try to work out my ideal scheme.

In his first year a student learns Chemistry and Physics. Both these subjects have direct and important bearings on Medicine (I use the word “Medicine” as meaning medicine, surgery, and all their branches), and both deserve all the attention which they now obtain. Only let them be taught with a view to their application to Medicine. This is most important. There are vast regions of chemical and physical knowledge of the

greatest scientific and industrial importance which are of no value whatever to the medical practitioner. Let the teacher of medical students avoid such parts of his subject, and confine his teaching as far as possible to the requirements of medical practice.

The other subjects studied during a man's first year are, in some schools, Botany and Zoology; in others, Biology. With regard to the first two, botany and zoology, I cannot see that they have any connection with Medicine at all. In giving this opinion I am not putting forward any new view. I will read you a few words from a lecture delivered by Dr. Graves about 1825. He says: "Botany is extremely valuable in itself: but to the student in medicine its utility has been greatly over-rated. . . . I do not wish to undervalue botany as a part of general education. But let it be restricted within its proper limits, and when once young men have seriously engaged in the acquirement of medical and surgical knowledge, let them not entertain the ambition of becoming accomplished botanists" (quoted in the *Edinburgh Medical Journal*, October, 1909). Exactly the same may be said of zoology.

In a Report on Medical Education, drawn up by a committee of the Edinburgh Pathological Club and approved by the Club in July, 1909, I find this statement: "We consider that the time has now come when it is not only desirable, but absolutely necessary, in the interests of the rest of the curriculum, to curtail the time spent on botany and zoology. It is now generally recognised that they have no longer any practical bearings on the succeeding parts of medical study" (*Edinburgh Medical Journal*, October, 1909).

I ask my fellow members Have we derived any real benefit from our studies in botany and zoology? any help in mastering our profession? I cannot think we have. And these subjects present a very real difficulty to our students. In Trinity College, at the examination in these subjects in June, 1909, out of 64 who entered

for the examination, 29 failed; and at the October examination, out of 33 students who entered only 9 passed, and 24 failed. These students who have thus failed have the whole of their subsequent studies deranged thereby.

In the Conjoint Scheme the place of botany and zoology is taken by Biology, which I believe means elementary botany and zoology with reference only to certain selected types. To this I have the same objection that I have already expressed to the more elaborate botany and zoology. There is no practical advantage to be gained by study of the vegetable kingdom, and, as regards the animal kingdom, it is far more useful to study man than any of the lower orders.

I hold that botany, zoology, and biology should be omitted from my scheme; and that, in addition to studying chemistry and physics, a student should in his first year dissect, and should attend a course of elementary—very elementary—lectures in Anatomy and Physiology. I would have these lectures extremely simple. In anatomy the rough morphology of the body: in physiology the elementary facts relating to the circulatory, respiratory, and digestive systems. Such a course would both serve as a systematic introduction to the more advanced anatomy and physiology of the following year, and would also enable the student to appreciate and to benefit by his attendance at hospital in his second year.

At the end of his first year the student should pass his examination in chemistry and physics, and an extremely easy examination in anatomy and physiology, based entirely on the courses of lectures which he has attended in these subjects.

During a man's second year he should attend hospital from nine to ten o'clock. The rest of his day he should devote to Anatomy and Physiology. Now, let me say boldly, I hold that the attempt is made to teach students far too much anatomy and physiology. There-

are distinguished surgeons in this Club ready at a moment's notice to operate on any fragment of the human body, no matter how remote or obscure. They may require a very extensive knowledge of anatomy: but they do not represent the average practitioner, for whom I say it is our duty to legislate. Let the hospital surgeon be compelled to take out some higher qualification, such as a Fellowship of a College of Surgeons, and in this examination let him have as much anatomy as you like: but on behalf of the general practitioner, I say that he is taught more anatomy than he finds of any use to him. So what happens? He remembers part of what he needs, or should need, in his work, and the rest he speedily forgets. I believe the student should have a strictly limited course in anatomy. The books he studies are too large. I think a book of some 300 to 350 pages would contain all the anatomy that the general practitioner finds useful to him.

And my views about Physiology are similar. I think a student is expected to learn too much. There is a great tendency nowadays to treat physiology as a science in itself, apart from its bearings on Medicine. This is quite right for students of Natural Science, but for medical students it is a great mistake. Let me read what Professor Starling said at the Sheffield Meeting of the British Medical Association in 1908:—"Knowledge should be imparted in direct proportion as it bears on the treatment of disease in man. . . . I believe that physiology even more than the other sciences which we have considered (anatomy and biology) should be taught directly in its relation to medicine. Such a conception certainly involves the dethronement of the muscle-nerve preparation from the high place which it has occupied in experimental physiology." (*Edinburgh Medical Journal*, October, 1909.) With this I am in full agreement. Physiology should be the introduction to Medicine, and experimental physiology should lead to clinical methods.

As regards his text-book of physiology, I think all that

is necessary for a student to know might be comprised in a book of 250 or 300 pages.

In a summer session in either his first or second year the student will take out his course of Histology.

I cannot but believe that in his first two years the average student will learn quite as much anatomy and physiology as he will find useful. Therefore, I would place his final examination in these subjects at the end of his second summer session—*i.e.*, at the end of his second year; and having passed this he would have finished with these subjects. Since I formed these views I have learned that others hold them too. In a draft scheme of medical education drawn up by a most influential member of the General Medical Council, himself a professor of anatomy, I find all the anatomy and physiology comprised within two years, and the final examination in these subjects placed at the end of the second year. I think, too, that this is the arrangement in the curriculum of the English Conjoint Board, a body whose students on the whole seem superior to ours at the examinations for the public services.

Having finished with anatomy and physiology, a student in his third year begins to prepare for his final examinations. He will, of course, now spend much more time at Hospital, and will take notes of, and dress, cases. It is, I think, a common complaint at all our hospitals that our students do not write careful or good notes. I have heard that when our men go up for the examinations for the public services a frequent cause of their failure is their inability to write a really good commentary on a case. Considering the number of comparatively small hospitals in Dublin, I fear the writing of notes at hospital will always be a matter difficult to enforce on all students. I would, therefore, make the writing of notes of hospital cases, in some degree at least, a matter under the control of the medical schools. I would appoint in each school a Junior Physician as medical tutor, and a Junior Surgeon

as surgical tutor. I would arrange that every student in each of his last three years should bring to the medical tutor the notes of a certain number of hospital cases—say, three—fully written out with the differential diagnosis, treatment, and the special objects of that treatment, as well as any peculiar features of the case. He should read these notes to the tutor, who would then cross-examine him on them: and if he found the student's notes and general knowledge of the case satisfactory, he would give him credit for the case. If not satisfactory the student would have to bring notes of another case in place of the first. In each of his last three years the student would have to get credit for three satisfactorily-reported medical cases. Similarly, he would have to get credit for three satisfactorily-reported surgical cases. Of course, the standard required by the tutor should vary much according to the seniority of the student. A third year's student would not be expected to produce as complete or elaborate notes as one in his fifth year. The notes when read should be kept by the tutor, so as to prevent their being simply copied by another student.

It may be said that students would copy very largely from each other's notes. That might partly be prevented by the above suggestion: but, in addition, if the tutor cross-examined the student on the case, he could readily ascertain if the man had really watched and studied the case.

But I think that to some degree the staffs of our hospitals are responsible for the poverty of case-taking. When the physician or surgeon goes round his cases with his clinical clerks and hears their notes only on his regular clinical mornings *i.e.*, once or twice a week—he, being engaged in giving a regular clinique to the class, is unable properly to go through the work of his clerk. The clerk may make careful notes which the physician never reads. This is most discouraging to the clerk. If we were to work our hospitals as they should be worked, we would go round our wards with our clinical clerks at a definite hour every day when not on clinical duty—say,

from 10 to 11 o'clock—and would with them examine our cases, and teach them individually. If we were to do this I have no doubt whatever but that the students would vastly benefit, and the reproach of case-taking would cease. But I fear (or shall I say I congratulate the members of the Club?) that, owing to the demands of private practice on our time, such an arrangement is impracticable.

One other point about attendance at each hospital. I am inclined to hold that every morning during the session a roll should be called of the students attending that hospital. The roll should be called by each clinical teacher on his own morning, and subsequently signed by him. To leave a book in the hall of the hospital for students to sign is worse than useless, as it is hostile to truth. But if a roll were to be called regularly, we should allow a student credit for his hospital session if he attended about 33 per cent. of the clinics. The attempt to enforce on all students a really regular attendance for the whole nine months of the session would probably be found impracticable.

What about courses of systematic lectures on Medicine, on Surgery, and on Midwifery? I know there is a widespread feeling that such courses should be abolished, and that students should derive their knowledge of these subjects entirely from hospital work and from their own reading. However, after some consideration, I hold that there is also a place for first-class systematic lectures on these subjects. In the first place, many students take in knowledge better from the words of a teacher than from the pages of a text-book. Secondly, there is the personal influence of a lecturer on his class. May I give my own experience in this connection? As a student I attended a course of lectures on Practice of Medicine at the College of Surgeons, delivered by Dr. Little, and I well remember how, when he had finished lecturing on, say, bronchitis, I felt myself per-

fectly competent in the strength of those lectures to attend and treat any case of bronchitis that might come before me. I remember how I felt that I should recognise each complication as it arose, and that I should know at once the appropriate treatment for each. I am perfectly free to admit that I may have been very far from competent to attend any such case; but a medical man, as soon as qualified, may be, and often is, called on to treat such a case. We know that a doctor's success depends very largely on whether he can gain the confidence of his patient; and we also know that the patient is most likely to place confidence in that doctor who has confidence in himself.

I hold, therefore, that there is a place in our curriculum for lectures on medicine, on surgery, and on midwifery.

Therapeutics deserve a course of lectures; and as many doctors have to make up their own medicines there should be some instruction in practical pharmacy. But much of *materia medica* is to me an absurdity and an anachronism—a relic of the days when doctors were herbalists, seeking their drugs in the fields and woods. When I was an examiner at the Third Professional Examination of the Conjoint Scheme, I used to see on an adjacent table boxes of leaves and bottles of roots, and collections of chips of wood, which the students were expected to identify. I often looked at these quaint things, but I did not recognise one of them, and what is more, I did not want to recognise them, for such knowledge would have been of no use to me. And what is the good of knowing what enemata are contained in the *British Pharmacopœia*? or what vapours? We prescribe what we think best, regardless of whether they are in the *Pharmacopœia* or not. We know the effect of a colocynth pill: am I any the worse if I do not know any single ingredient in it except the colocynth that gives it its name? Let us have plenty of therapeutics, including the dosage of powerful or poisonous drugs, and the strength of their ordinary preparations. Let us have such *materia medica* and

pharmacy as will be useful; the knowledge of compatible and incompatible drugs; what tinctures contain resins and must have mucilage to suspend them, and such like knowledge; but let us cease to ask our students to recognise crude drugs, or to remember the ingredients of each purgative pill in the Pharmacopœia; and if we must have something more than I have suggested, let us have a course of lectures on Burroughs and Wellcome's Tabloids.

As regards my own subjects—Hygiene and Forensic Medicine—I am not, perhaps, a disinterested witness, but I would certainly include them in my scheme. Hygiene is a subject about which every doctor should certainly know something. Epidemics, ventilation, water-supply, drainage, are subjects of much practical importance to him. Forensic medicine is less frequently of use to the practitioner; but I think it fully deserves to be combined into a course along with hygiene.

Pathology and Bacteriology must be carefully taught. I have nothing to say about our present methods with regard to these subjects, except that when a *post-mortem* examination is made at hospital I think a roll of the students attending that hospital should be called, and candidates for their final examinations should be required to produce evidence that they had been present at a certain number of *post-mortem* examinations.

I think more instruction, practical in nature, should be given the student in Clinical Methods; I mean the modern scientific methods of examining the sick and investigating disease—the staining and recognition of the chief pathogenic bacteria, the examination of stomach contents, the estimation of hæmoglobin and the counting of blood-corpuscles, the recognition of urinary sediments. These are subjects which I think deserve a special course given preferably in a pathological laboratory. I know these subjects are now taught, partly in the course of practical physiology, partly in that of pathology; but I consider their importance such as to deserve a special

course. And, as I will mention further on, I would include in the final examination a practical examination in clinical methods held in a laboratory, in which examination the candidates would actually examine blood, and stain sputum, and make similar investigations.

The courses of operative surgery that exist are, I think, excellent, and should not be altered.

This, I think, concludes all the school courses that a student takes out for his final examination. I come now to the Special Hospitals.

The Eye Hospital course is excellent.

As regards Midwifery Hospitals, the material is splendid, but the methods might, in my opinion, be a good deal improved. A student must enter for a six months' course at the hospital, and has to take out so many conductions and so many attendances. He attends the hospital two nights a week. Most of the instruction in midwifery that he gets he obtains from the head midwife. When he has got credit for the requisite number of confinements, he ceases to attend regularly, and only goes now and again. There are dispensaries and clinics and operations in the mornings, but he is under no compulsion to attend them, and in many cases the student does not attend them. There has been lately a discussion or dispute whether the course at a lying-in hospital should be a three months' or a six months' one. I think a very much more important matter is that students should attend during the course, whatever its length may be. There might be systematic instruction at night given by the master or assistants. I know there are difficulties in getting the students to attend such clinics, but if a roll were called and a certain number of attendances made compulsory, the students would have to attend. I hold that each student should be obliged to be present at a certain number of the morning clinics, a roll being called every morning.

If systematic instruction were thus given, and if means

were taken to make the students attend, it appears to me that the student would learn more during a three months' course than he does at present by a nominal and perfunctory attendance for six months.

I hold that every student should be compelled to take out a course of instruction in Diseases of the Throat, Nose, and Ear. He is forced (or, at any rate, a serious attempt is made to force him) to learn the use of the ophthalmoscope: why not endeavour to teach him to use the laryngoscope and the aural and nasal speculums? In order to ensure that the student should pay attention to these subjects I would include in his final examination a special examination in them.

But there is another matter on which I feel very much more strongly. Toothache and Bad Teeth form the commonest disease that we suffer from. Throughout the country districts of Ireland and in almost all the smaller towns the only man to whom a poor person can go to have a tooth extracted is the dispensary doctor. Yet in this subject we have given him no instruction whatever. Take another case:—In our hospitals we supply our residents with a set of tooth forceps, and perhaps with an elevator or two. We give them no instruction, but we let them loose to make havoc of men and women, and (what is even worse) of poor little children who come to them for relief. I do not blame our residents; they do their best; but I do say that the system is absolutely wrong. Many dispensary doctors pull out teeth exceedingly badly. Let me mention some personal recollections. I have for years past gone for my holidays to a place in the West of Ireland. The one thing I must bring with me is a set of old tooth forceps that I have had for years. Last year I forgot to bring them, and one morning as I went into the kitchen before breakfast I found four girls waiting there, all wanting to have teeth extracted. I told them I had no instruments with me, but they would not be pacified, and I could only satisfy them by telling them I would write home and have the forceps sent me by post, and

promising that if they would come back after a few days I would extract their teeth. So I got the forceps down, and after a few days the four girls came back, bringing several others with them, and then tooth-extractions went on merrily. I do not know how teeth should be pulled; so I asked the girls why on earth they insisted on coming to me. "Because you hurt so much less than Dr. —." And if such an unskilled one as I am is supposed to do comparatively painless extractions, what manner of monstrous thing must the dentistry be which those girls shrank from as being too painful to be borne? And this doctor is no worse than hundreds of others. There is an appalling amount of unnecessary pain caused to men and women and poor little children through the ignorance of the rudiments of dentistry on the part of the doctors throughout Ireland. I would, therefore, make every medical student take out a month's course of elementary Dentistry at the Dental Hospital—in that time he could learn how to pull teeth, and what the different kinds of forceps are intended for, what teeth should be taken out and what left in. And this, while greatly lessening the suffering of the people, would not take any money from the dental profession, because obviously no one would let the local doctor manipulate his teeth unless he was quite unable to afford even the smallest fee to the nearest dentist. And also we must remember that in country districts there are no dentists available.

Mr. F. O. Stoker tells me that when he was a dental student at Guy's Hospital all the medical students used to take out an elementary course of dentistry. And Dr. Baker tells me there would be no difficulty in giving such a course at the Dental Hospital.

As regards Lunacy, I am somewhat doubtful if there should be a special course in this subject. The recognition of insanity and its management appear to me to depend more on common sense and less on special training than is the case with other morbid conditions. What I mean is this—the intelligent man in the street cannot

attempt to give any authoritative opinion whether his son has mitral regurgitation or his daughter a cavity in her right apex; but he can tell perfectly well if the boy is the subject of delusions or if the girl is melancholy. However, on the whole, I think it better that students should have a fairly short course of instruction at an asylum, so that they may see a number of insane people and hear them talk before being called on to certify a patient as insane. Probably a month's course is quite long enough.

I hold that the recently-introduced instruction in Anæsthetics is a most valuable improvement in our curriculum.

Lastly, as regards Vaccination—an absolutely ridiculous course. Six attendances at a vaccinating station—six mornings lost for the sake of a subject which I believe could be thoroughly well taught in one. Each student must learn to vaccinate, and must see the vesicles produced by vaccination, but for this one morning at a vaccination station is quite enough.

As regards the final examinations (the third and fourth of the Conjoint Scheme, and the first and second part of the final in Trinity College), I would in some respects extend them. I think the clinicals in medicine and surgery should be more searching than is now the case. It was lately suggested that the clinicals in surgery should be held in the medical school, selected patients being brought there for the purpose. I think, to make the clinicals complete, they should be held both in the hospitals and in the medical schools. If a student, being brought to a clinical hospital, is found to make a correct diagnosis of a valvular murmur or of the nature of the enlargement of a knee, it is impossible for the examiner to tell whether he has made the diagnosis himself or whether it had been told him beforehand by a friendly resident. But if several diseased hearts and knees came to the medical school (they would come in numbers for half a crown apiece) the student would have to depend solely on his own skill. I would, therefore, make the clinical

examination double—one part in hospital and the other at the medical school.

The clinical in midwifery and gynæcology is a great advance.

In addition to the other parts of the examination as held at present, I would, as I have already indicated, institute a laboratory examination in Clinical Methods and a clinical examination in Diseases of the Throat, Nose, and Ear. For obvious reasons, I would not institute a practical examination in Dentistry.

To sum up. I have urged that all our courses of study should be more entirely based on their intimate connection with practical Medicine. I have endeavoured to lighten the curriculum by leaving out botany and zoology (or biology, if that name is used), and by lessening the amount of anatomy and physiology taught to a student. On the other hand, I have advocated that the final subjects be given more time, that special courses be given in laryngology, in clinical methods, and in elementary dentistry, and I have urged that the final examinations be made fuller and more searching than is the case at present.

I have two requests to make of the Club. The first, that you may all believe that in the criticisms which I have made, I am criticising, not the Dublin teachers nor their methods—for both I have nothing but profound admiration—but I am criticising the principles which underlie their work; and, secondly, as I have been somewhat unsparing in my criticism, so I beg you to be even more unsparing in your criticisms not only of my scheme but also of my methods and my work.

ART. IV.—*Glycosuria and Graves's Disease.*^a By HENRY C. DRURY, M.D. Dubl.; F.R.C.P.I.; Physician to Sir Patrick Dun's Hospital, Dublin.

FROM time to time the occurrence of glycosuria in Graves's disease has been noted by various observers, but

^aRead before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, January 7, 1910. [For the discussion on this paper, see page 114.]

rather as an accidental phenomenon than as a combination which pointed to any remote connection between the two diseases. Of late years, however, it has been observed that the combination was more frequent than had been suspected; not only so, but that in a considerable number of cases of diabetes there was a history of past Graves's disease. These facts suggested that there might be some connection not hitherto thought of, between the two.

That little importance was attached to this question is seen by a glance at the standard text-books of a few years ago. Indeed, the most recent additions do not add much. In Hilton Fagge's "Practice of Medicine," 2nd edition, 1888, there is no mention of glycosuria in Graves's disease, nor of Graves's disease associated with diabetes. Osler, in his "Practice of Medicine," 2nd edition, 1895, makes no mention of Graves's disease associated with diabetes, but says that in Graves's disease glycosuria is not infrequent. Saundby, in "Allbutt's System," 1st edition, 1897, mentions as an example of the rarer complications of diabetes that it may be associated with Graves's disease. Williamson, in Gibson's "Text-book of Medicine," 1901, makes no mention of the combination in his article on diabetes. Sir Lauder Brunton, in the same text-book, in his article on Graves's disease, says "the patients generally belong to neurotic families, in other members of which hysteria, epilepsy, diabetes, and mental diseases have appeared." This in 1901, although in 1874 he described, in Bartholomew's Hospital Reports, Vol. X., page 253, a fatal case in which the two diseases were combined. It would appear, therefore, that in 1901 he did not attach much importance to the combination. A similar case was recorded by Sir Samuel Wilks in the *Lancet* of the following year—1875. A third case was reported by O'Neill in the *Lancet* of 1878. H. Stern, in the *Journal of the American Medical Association*, 1902, has given a general survey of the subject, and has collected twenty-four cases of combined Graves's disease and

diabetes. Twenty-two of these were in women, two in men. The ages varied from eighteen to fifty-nine. He quotes Chvostek as having found alimentary glycosuria in 69 per cent. of his Graves's disease cases. Dr. George Murray, Professor of Systematic Medicine in Victoria University, Manchester, has published an interesting paper on the relationship between these two diseases in the *Clinical Journal* of July 28, 1909, and in it reports four cases which have come under his own observation. The first in a female, aged twenty, who had exophthalmic goitre and recovered: four years later she was found to have severe diabetes in March, and died in June. The second, a female, aged twenty-five, had Graves's disease for two years; three years later she developed severe diabetes. Third, a female, aged thirty-eight, had Graves's disease and recovered; she was given thyroid extract, the Graves's disease recurred, and in addition diabetes appeared. Fourth case, a man aged twenty-two, had Graves's disease as a youth; eleven years later he developed diabetes.

To this valuable paper of Dr. Murray I am indebted for most of my information and ideas on the subject, and I have freely made use of it in this short communication. To my colleague, Dr. Magee Finny, I am indebted for bringing Dr. Murray's paper under my notice.

It would appear, then, that this combination of diseases is not a mere accident, but that there exists some morbid connection between the two. Let us see what further support there is for this idea.

We are only beginning to understand the functions of some of the ductless glands, and also beginning to realise that other duct-bearing glands besides the liver have important internal secretions. It is probable that between these glands there is considerable interdependence, but we know little about this yet. An illustration of it, however, is seen in the case of myxœdema. Here one of the symptoms of the loss of thyroid secretion is the cessation of the secretion of the sweat glands, and

probably also of the sebaceous glands. Apparently this is a case of interdependence, for when thyroid extract is supplied in such cases artificially, not only do the other symptoms disappear, but the sweat glands again begin to act. If diminished activity of the thyroid reacts on the activity of certain glands, it is quite likely that over-activity of the thyroid will also react on some other gland or glands, and one example of this over-action is again seen in the case of the sweat glands, which in Graves's disease are stimulated and cause excessive sweating.

In Graves's disease there appears to be excessive activity of the thyroid gland; and of recent years great interest has been centred round the pancreas as the organ in some way at fault in diabetes.

Of twenty-seven cases of diabetes examined by Saundby, in only six of these could the pancreas be described as normal, and, as he says himself, "we have a good deal still to learn about the significance of slighter changes in its structure, and it is possible that, while appearing normal to the naked eye, it may be extensively diseased." We know that extirpation of the pancreas in dogs is followed by diabetes, and in one case in which it was removed in man (by W. T. Bull) diabetes resulted. In many cases of diabetes a gross lesion of the pancreas has been found, and in many others, in which there was no gross lesion, microscopic changes of structure have been made out. These finer changes are chiefly increase of fibrous tissue or changes in the so-called islands of Langerhans. Now, it is believed that these islands of Langerhans are concerned with the internal secretion of the pancreas, and that the internal secretion, or, rather, its disturbance, is concerned with diabetes.

Rolleston, discussing cirrhosis of the liver, says:—"The gland (*i.e.*, the pancreas) cells undergo fatty and pigmentary degeneration, but, according to Steinhaus, the islands of Langerhans, which play an important part in the production of the internal secretion and in the

production of diabetes, remain intact. In the cirrhosis of hæmochromatosis, however, which is an exception to this rule, the islands of Langerhans are eventually destroyed, and as a result there is diabetes." Further on he says:—"It is rare to find sugar in the urine in ordinary cirrhosis. Glycosuria occurs in a high proportion of the cases of pigmented cirrhosis. . . . but it is then due to a concomitant fibrosis of a very intimate nature in the pancreas (involving the islands of Langerhans), a change which is not present in ordinary cirrhosis." And again:—"When the fibrosis of the pancreas reaches such a degree that the islands of Langerhans are involved diabetes results."

Quite recent researches practically confirm this. Macallum, in the Johns Hopkins' Hospital Bulletin for September, 1909, summarises thus the results of his experiments:—"When a portion of the pancreas is separated from the rest, and the duct ligated, it undergoes extensive atrophy, a tissue remaining which is apparently composed of enlarged islands of Langerhans and the remains of pancreatic ducts. If the rest of the pancreas be removed, this atrophied remnant is capable of warding off glycosuria, even when considerable amounts of dextrose are injected. When it itself is removed also glycosuria appears at once. Whether this glycosuria would persist until the death of the animal remains to be proved. The experiment seems to demonstrate the specific control of carbohydrate metabolism by the islands of Langerhans."

H. Eppinger and others have shown that there is a direct relationship between the thyroid and the pancreas, and that the glands tend to inhibit each other—that as a result of hyperthyroidism there is inhibition of the pancreas causing relative insufficiency of the internal secretion with alimentary glycosuria or its easy induction (*Zeitsch. für klin. Med.*, 66, 1908, p. 1). Lorand has found that thyroidectomy caused increase of Langerhans' islands. Also, that the glycosuria resulting from re-

removal of the pancreas ceased on removal of the thyroid. The animal, however, lived only a short time. (*Comptes Rendus des Séances de la Soc. de Biologie*, t. lvi., p. 488.) Hector MacKenzie says:—"The carbohydrate secretion is influenced to some extent by the thyroid secretion; sugar is excreted in the urine of dogs after thyroid feeding, when large quantities of carbohydrates have been given; and the amount of glucose which can be given without causing glycosuria is less than the average in patients suffering from Graves's disease or in persons who have been treated with large doses of thyroid substance." In one of Stern's cases the Graves's disease had subsided, but diabetes supervened, and on the administration of thyroid extract with arsenic there was a rapid and large increase of the output of sugar. In one of Dr. George Murray's cases that had recovered from Graves's disease the administration of thyroid extract was accompanied not only by a relapse but also by diabetes.

In view of all these facts, Dr. George Murray suggests that in Graves's disease the excessive thyroid secretion thrown into and circulating in the blood first inhibits the islands of Langerhans, and so causes relative insufficiency of the internal secretion, and thus alimentary glycosuria or its easy induction on increase of carbohydrate food. Finally, it may lead to atrophy of the islands, and thus brings about true diabetes.

These very interesting questions have induced me to bring under your notice, and so record, a case which I have lately met with, and which directed my attention to this subject:—

On the 2nd of November, 1909, a young girl, aged eighteen, was admitted to Sir Patrick Dun's Hospital under my care, with symptoms of diabetes. She was greatly emaciated, weighing only 6st. 4lbs. 3ozs., though of average height. She stated that she had noticed herself getting thin for about two months, and latterly had become very weak, but began to suffer from

thirst about the middle of August—that is, two and a half months before. She had also missed two menstrual periods. It was evident that she was also suffering from Graves's disease, there was only slight exophthalmos, but well-marked retraction of the lids; von Graefe's sign was present in limited extent, being only seen when the visual axis passed below the horizontal line. There was decided bronzing of the eyelids. There was slight tremor of the hands, and the skin was unduly moist, though no profuse sweating. The thyroid was moderately enlarged; it pulsated, and a thrill could be felt in it. The heart's action was tumultuous and very rapid, the cardiac impulse being widely diffused; the apex beat violent, but no murmur could be detected. The pulse-rate varied while in hospital from 100 to 140. The areolæ of the breasts were deeply pigmented, but the breasts themselves were small and functionless. She complained of the throbbing of her heart, and said it had troubled her for a long time—several months—before she noticed the thirst or the increased quantity of urine.

While in hospital the amount of urine passed varied from 100 ounces to 177 ounces in the twenty-four hours. Its specific gravity was 1042, and at first it gave a slight diacetic acid reaction with perchloride of iron, but the reaction for acetone itself, though looked for, was not found. The diacetic acid reaction disappeared in a couple of days.

Her carbohydrate food was considerably limited, but not altogether withdrawn, and she was given crude opium in the form of compound soap pill night and morning. She remained in hospital only seven days, as she fretted greatly to get home, and on two occasions got into such an excited hysterical state that more harm than good would have resulted in her remaining longer. Her condition could not be said to have improved in any way during her stay in hospital. She has been kept under observation since, and has been seen from time to time. There is no improvement; she has steadily lost weight, the specific gravity of the urine is always high, 1040 to 1050, and acetone was present in the urine on each occasion. The signs of Graves's disease also are more evident, though the heart's action is quieter.

Dr. Murray points out that not only do the two diseases run concurrently, but that also, if it be looked for, glycosuria not producing symptoms will be found

more frequently than hitherto suspected. Also, as already alluded to here, a considerable number of cases are on record in which Graves's disease has at one time been present and recovered from, and that subsequently true diabetes has developed. That when the two diseases run together the diabetes is always of severe type.

ART. V.—*Remarks on the Treatment of Gastric Ulcer.*^a

By JAMES CRAIG, M.D. Univ. Dubl.; F.R.C.P.I.;
Physician to the Meath Hospital, Dublin.

It is not only just but expedient that physicians should recognise and acknowledge the splendid work which their surgical colleagues have accomplished within recent years in the domain of gastric surgery.

So excellent have been their results in certain classes of cases that one is not surprised to find a growing tendency among all sufferers from any variety of gastric trouble to gravitate to the consulting-rooms and hospital wards of the operating surgeons.

Fifteen years ago the physician called the surgeon to his assistance when some calamity, such as perforation, had arisen in connection with the treatment of a gastric case. To-day there are signs that the positions are becoming reversed, and it may be that somewhere in the near future it will rest entirely with the surgeon to decide what cases he will himself treat and what he will relegate to the care of the physician.

Needless to say, the prospect that such a state of affairs may arise is not altogether pleasing to the physician, and, furthermore, I believe, if it does happen, that it will neither tend to the advancement of scientific surgery nor lead to greater confidence on the part of the public. There is great need that the physician and surgeon should continue to work together, for there is still room for both, and in no section of human ailments is it more necessary

^aRead in the Section of Medicine, Royal Academy of Medicine in Ireland, January 7, 1910. [For the discussion on this paper see page 145.]

that they should work together, and their relative powers and limitations be recognised, than in the case of gastric derangements.

A feeling appears to have gained a hold in the minds of the surgical profession that their medical colleagues have been slow to recognise the possibilities for good that lie within the scope of the knife, and have accordingly been slow in seeking for surgical assistance, whereas the physicians, on the other hand, appear to have become imbued with an idea that surgeons were occasionally reckless in undertaking operations and were not too punctilious in giving up the future care of the patients.

These points of view, and perhaps others, have led, I believe, to a certain amount of estrangement between physicians and surgeons, and the short paper which I now bring before the Academy is written with the best intentions to endeavour to show what the physicians may fairly claim to be able to accomplish, and the extent to which surgical interference may be productive of good in the treatment of cases of gastric ulcer. I trust also that what I have to say may do something to remove any feelings of distrust which the two great branches of the medical profession may entertain towards one another.

My surgical colleague, Mr. William Taylor, has lately mapped out certain lines which he is disposed to follow in regulating his practice in the treatment of gastric ulcer, and I am pleased to say that I am in complete agreement with him in nearly every instance.

The rules which I have formulated for my own guidance are somewhat upon the following lines:—

1. Cases of acute ulcer of the stomach may be confidently expected to get well with a course of sufficient rest combined with suitable dietetic and medicinal treatment.

Should perforation, however, occur, as it sometimes does, even during a course of the above-mentioned treatment, then it is almost needless to say that surgical assistance is imperatively called for.

On the other hand, should hæmorrhage—even several successive hæmorrhages—occur, I am not prepared to advocate operative interference in these acute cases. This is, I think, the only point upon which I am unable to agree with Mr. Taylor, who considers that where a copious hæmorrhage has taken place, and more particularly where there is an immediate recurrence of it, an attempt should be made to secure the bleeding vessel in the floor of the ulcer. His reasoning, however, that a life may be lost which an operation would have saved, is worthy of careful consideration.

2. In all cases of chronic gastric ulcer (of a non-malignant type), unless it is apparent at the time that pyloric obstruction has been already produced by the ulcer, I consider it is only fair to give the patient a chance of recovery in the first instance by a course of treatment similar to that employed in acute cases. I am bound to admit that in the great majority of cases where the symptoms have been in evidence for a year or longer that recurrence of such symptoms takes place within a longer or shorter period, as the case may be, even although a cure appeared to have been effected as the result of the rest combined with dietetic and medicinal treatment. I am convinced, however, that a small proportion of these cases remain permanently well, and for this reason I believe the physician is justified in attempting the cure.

It is in the chronic cases, where symptoms *recur*, that surgical interference has been followed by the most brilliant results, and it is in such cases that I gladly recognise the good effects that follow the operation of gastro-enterostomy when performed by a skilful surgeon: but it must be admitted that even when we exclude such occasional accidents as the occurrence of the vicious circle or perforation from an intestinal ulcer which has formed at a point opposite the opening of the stomach there is still a margin of cases, whose number is at present unknown, in which all the previous symptoms reappear after operation. Nevertheless, there should be no hesi-

tation in recommending a gastro-enterostomy to be performed in all chronic cases in which there is an undoubted recurrence of symptoms pointing to a chronic ulcer.

The question of the hydrochloric acid content of the gastric secretion has such an important bearing upon the treatment of gastric ulcer, whether the treatment be dietetic and medicinal or whether it be surgical, that I hope you will pardon me for alluding to its significance.

I may say that it is not within the province of this short paper to discuss the diagnostic significance of the absence or presence of free hydrochloric acid in the various derangements of the stomach, although the importance of having a chemical examination made of the stomach contents after a test meal has been given is now fully recognised as affording a distinct help in the diagnosis of functional as well as organic cases. I can only touch at present upon the result of chemical investigations that have been made in recent years in connection with cases of gastric ulcer.

Dr. Willcox, of St. Mary's Hospital, London, published in the *Quarterly Journal of Medicine* for October, 1909, a critical review of the estimation and quantitative significance of hydrochloric acid in the gastric contents, and from this review I extract the following table:—

HCl. may exist as—

- | | | |
|---|---|--------------------------|
| <p>I. Free hydrochloric acid — <i>i.e.</i>, the acid is not combined with any base, either inorganic or organic.</p> <p>II. Hydrochloric acid which is combined</p> <p style="padding-left: 20px;">(a) With proteins.</p> <p style="padding-left: 20px;">(b) With other nitrogenous organic bases.</p> <p>III. Hydrochloric acid which is combined with inorganic bases to form neutral salts—<i>i.e.</i>, sodium chloride.</p> | } | Active hydrochloric acid |
|---|---|--------------------------|

The first two combined he calls "Active hydrochloric acid." They must have been secreted by the stomach.

and, as is shown in the table, are equal to the free HCl. + the HCl. combined with proteins and other organic bases.

Many workers, such as Vaughan Harley and Goodbody, in making a quantitative examination of the gastric contents, determine the amount of volatile acid, the amount of free HCl., the amount of HCl. combined with proteins, and also the amount of HCl. combined with minerals.

The point, however, upon which I desire to concentrate your attention is that in the great majority of cases of gastric (and also of duodenal) ulcer the "active hydrochloric acid" is markedly increased, and free hydrochloric acid is present *in excess*. The condition, as you are aware, is spoken of as hyperhydrochloria or hyperchlorhydria.

I cannot here indulge in a recital of the numerous theories that have been put forward to explain the occurrence of a gastric ulcer, but it is now pretty generally accepted that an excess of HCl. in the gastric secretion is an important factor in its causation. Bolton found that, if gastrotoxin is introduced into the wall of the stomach of an animal, necrosis and ulcer will result, but not if the HCl. has been previously neutralised by sodium bicarbonate. If we admit, therefore, that there is an excess of HCl. in cases of gastric ulcer; if we further admit that probably the excess of HCl. is an important factor in producing the ulcer; and if it can be also admitted that the presence of the excess of HCl. is an important agent in the production of pain and in the prevention of the healing of the ulcer, then we are in a position to approach the relief of such a condition by methods founded on a sensible basis. That is, we must endeavour to get rid of the excess of hydrochloric acid in the gastric contents. Now let us consider in what way we may hope to accomplish this. First of all, there is the administration of alkalis given with the object of neutralising the excess of acid. At best the relief afforded in this way is only of a temporary nature, even if harm is not done by

the use of bicarbonate of sodium, which is so frequently used. Secondly, attention has already been directed to the important fact that HCl . combines in the stomach with proteins given as food, so that the importance of a diet rich in easily assimilated proteins at once becomes evident. Lenhartz took advantage of the fact that HCl . in the gastric secretion combines with protein food, and introduced with great success the treatment of acute gastric ulcer by what is known as the method of "Immediate Feeding," by which much larger quantities of food rich in proteins are given than was previously thought advisable. To the details of this method I shall subsequently refer. Thirdly, the administration of a ferruginous preparation, such as the dried sulphate of iron, may be considered capable of using up some of the excess of HCl . in the gastric contents by forming an albuminate and a chloride compound.

Investigations have shown, moreover, that there is an excess of HCl . present in cases of chlorosis, and we are familiar with the frequency with which anæmia and gastric ulcer are combined, so that in the administration of an iron preparation in cases of gastric ulcer we may prescribe it with a double object, first as a means of using up the excess of HCl ., and, secondly, to relieve the anæmia.

When we come to the question of the treatment of chronic ulcers that have not proved amenable to the methods that meet with success in acute cases, it is surely a tremendous advantage to the physician to be able to rely on the help of his surgical colleagues who will perform a gastro-enterostomy and cure the patients. It is only right that we should endeavour to obtain an answer to the question—How does this operation afford relief and effect the healing of a chronic ulcer?

I have never hesitated to teach that in my opinion a gastro-enterostomy was not a sound or scientific procedure. I have maintained that where possible the removal of the ulcer, to be followed afterwards by suitable

dietetic and medicinal treatment, would be a more surgical undertaking and more likely to end in permanent benefit to the patient. I recognise, however, that in some cases the removal of the ulcer might be impossible, and that a gastro-enterostomy is at present the operation which surgeons most readily undertake, and although I am not altogether in favour of having a second opening made in the stomach when the pylorus is patent, still I am bound to testify to the excellent results which follow the procedure. Many reasons have been adduced to explain the curative action of a gastro-enterostomy, but it is now pretty generally admitted that the second opening in some way relieves the hyperhydrochloria.

Willcox, in the criticism before referred to, published the result of the examination of the gastric contents in five recent cases in St. Mary's Hospital before and after gastro-enterostomy for gastric ulcer.

He found that *free* hydrochloric acid was absent in three cases after the operation although present before the gastro-enterostomy was performed, and, further, that in every case the *active* hydrochloric acid was reduced after the operation. Bile and mucin were found in all the cases after the operation, and this has led him and others to assume that these were carried from the duodenum into the stomach through the new opening, and without doubt that the presence of bile, &c., in the stomach had the effect of partly neutralising the HCl secreted by the stomach. There can be little doubt also that the opening into the intestine favours the escape of the highly acid gastric secretion.

I was under the impression that the view was prevalent among surgeons that the partly-digested food passed directly from the stomach into the small intestine after a gastro-enterostomy had been performed, and thus gave rest to the wall of the stomach and the ulcer it contained. But while one authority states that where the pylorus is patent it is quite easily demonstrated by means of bismuth in the food and X-rays that the food continues to

escape from the stomach by way of the pylorus another equally eminent observer has just as plainly observed the food passing through the gastro-enterostomy opening directly into the jejunum. If it were beyond question that the food continued to pass through the pylorus, then it removes one of the most serious objections which I had formed against gastro-enterostomies, for it was apparent that it could not be right to divert the food away from its natural course, where its stimulating effects in the duodenum would be lost on the pancreatic and hepatic secretions.

It is true that in some cases of chronic ulcer, where the symptoms have extended over several years and much inflammatory thickening is found, the active hydrochloric acid may not be much raised or may be only normal in amount, but still it is said (Willcox) that these cases are also cured by a gastro-enterostomy. From this observation one is not unnaturally led to suppose that other factors enter into the cure by operation besides the relief of the hyperhydrochloria.

I now wish to examine the treatment of acute ulceration a little more in detail. Rest, milk diet, relief of constipation, with bismuth and alkaline mixtures, and iron, form the basis of the lines on which most physicians in this country work.

In London rectal feeding has been much more extensively employed than has ever been the case here. In Dublin a milk diet (of from two to three pints per diem) has been attended with excellent results, and is that upon which I have on the whole relied. For many years, however, I have been emphasising the fact that iron is very scantily represented in milk. Stockman in 1891 calculated that five pints of milk would be required to supply the amount of iron required daily by a full-grown adult, and, to quote Hutchison, "for this reason persons who are kept for a long time on a purely milk diet are apt to become anæmic." As previously stated, patients with gastric ulcer are practically always anæmic, and a milk

diet makes them more so. Undoubtedly milk is one of the least irritating of foods in causing a flow of gastric secretion—but there is no doubt that in eggs we have another food which is of the greatest value in the dietary of cases of ulcer of the stomach. The egg albumen readily takes up HCl. and so relieves the hyperacidity. The yolk is of great nutritive value, as it contains protein and a large amount of fat; but furthermore it is comparatively rich in iron which is present as an organic compound, probably with nuclein, and, therefore, as an organic compound it is easily absorbed.

Stockman calculated that seven and a half ordinary-sized (2 oz.) eggs yield sufficient iron to supply the blood of an adult with its daily requirement in this respect.

For these reasons I have been accustomed to add the albumen water and the beaten-up yolk, in soda water, of one or two eggs daily to the milk diet.

Where Professor Lenhartz's treatment has made a departure from recognised methods is in the rapidity with which he increases the amount of nourishment given to the patient by the mouth. I have the strongest objection to be tied down to hard and fast rules which must be slavishly followed in every case irrespective of the special characteristics of the patient or of the disease; but I was agreeably surprised to find how little modification on the whole it required when one comes to put the treatment into practice. The details of the treatment are:—

1. Rest in bed for four weeks, during the first two of which the patient is not even allowed to sit up for any reason whatsoever.

2. An ice bag is kept on to the epigastrium for the first two weeks.

3. The dietary consists of 10 oz. of milk and one beaten-up egg on the first day, and each successive day $3\frac{1}{2}$ oz. of milk and one egg beaten up with sugar are added until a total of $1\frac{3}{4}$ pints of milk and 6 or 8 eggs are consumed, and this corresponds with the eighth day. From the third to the eighth day, according to the disappearance of

symptoms, 1 oz. of raw, or nearly raw, minced beef or chicken is given and increased next day to 2 oz. if well borne. About the eighth day a little well-boiled rice is given, followed in a few days by softened bread, and then a small amount of bread and butter. The number of eggs is gradually reduced, and one or two of them are given, lightly boiled, as the other food is increased. During the third week more mince and pounded fish are given, and by the end of the fourth week the patient is able to partake of normal diet and to get out of bed. He leaves hospital about two weeks after.

4. As to medicine. For the first ten days 30 grs. of sub-nitrate of bismuth without mucilage are given thrice daily, and towards the end of the first week pills are administered containing dried sulphate of iron and light magnesia. The amount of sulphate of iron may be increased from $7\frac{1}{2}$ grs. to 30 grs. daily.

5. The bowels are not interfered with during the first week, although a natural action may occur, but afterwards an enema, if required, is administered every fourth day.

There is nothing of very much importance in all this detail—nothing that appeals for its enthusiastic and slavish adoption any more than for its scornful rejection. To me it seems that there is included in the method one outstanding principle, the adoption of which, if it can be carried out with safety to the patient, is an advance on previous dietetic methods. This principle is the giving of easily-assimilated protein food in rapidly-increasing amount, so that the excess of free HCl. is taken into organic combination, and by giving a large amount of nutriment the strength of the patient is quickly restored, and the gain in weight is marked.

I have not used the ice bag. Professor Lenhartz is a strong advocate for a supply of good teeth, and instructs his patients to masticate slowly. We all agree in the necessity for teeth that can chew. It is possible that much ill-health and anæmia may arise from continued

absorption or the swallowing of septic material in cases of dental caries, but the want of grinders is, I fancy, greatly to blame in the production of gastric ulcer. For the person who is unable to chew falls back upon soft carbohydrate food, which tends to produce excess of HCl. without using it up by forming organic compounds.

I wish to refer very briefly to my own experience in the adoption of Lenhart's treatment, which I have followed fairly closely in all respects with the exception of the ice bag.

In a case of chronic ulcer with gastrectasis the patient, a labourer, aged twenty-eight years, was put on the treatment on May 5th last, when he weighed 7st. 11lb. He left hospital free of all symptoms on June 22nd, when he weighed 9st. 4lbs. (a gain of 2st. 3lbs.). His symptoms of pain and discomfort returned in August. He again entered hospital on November 4th, when he was transferred to the surgical wards under Mr. Taylor's care, and a gastro-enterostomy was performed and an ulcer found. He is now in excellent health, I am told.

In three cases of acute ulcer in women the results were most satisfactory. One remained in hospital under this treatment from May 25th until June 22nd. She left free from symptoms, was eating ordinary diet, and increased in weight from 7st. 4lbs. to 8st. 7lbs., and is still in good health. The second was placed on the treatment on September 26th, and left hospital on October 31st, having no symptoms, eating all food, and having increased in weight from 7st. 6lbs. to 8st. 7lbs. The third was placed upon the treatment on November 20th, and she was free from all symptoms, eating all food, and left hospital on Monday, January 3, 1910.

I have tried the immediate feeding on several other cases where the diagnosis was in favour of a neurosis rather than of ulcer, but the results were not satisfactory.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Age Incidence, Sex, and Comparative Frequency in Disease. By JAMES GRANT ANDREW, Bachelor of Medicine and Master of Surgery, Univ. Glasg.; Fellow of the Faculty of Physicians and Surgeons, Glasgow; Surgeon to the Victoria Infirmary, Glasgow. London: Baillière, Tindall & Cox. 1909. Demy Svo. Pp. xx + 439.

IN the Preface to this work the author makes his case for its acceptance by the medical profession by a statement which must win the respect of all—that his book is the result of the laborious application of ten years' tabulation, during which time no less than 42,603 cases have been selected from persons treated in the Victoria Infirmary, Glasgow.

The value of this work depends on the character of the writer, as compared with similar statistics which are the result of collection, more or less dependable, from many sources. The notification of diseases is by no means a novel idea, and if properly carried out would be of enormous utility in comparing the morbidity from each disease with the mortality therefrom, and it is to be hoped that in the future, at least in those cases which are treated in the hospitals of the Empire, a *modus vivendi* will be arrived at for procuring a complete system of collective investigation in morbidity statistics. Regarding the utility of Dr. Grant Andrew's work, it will be of great value to authors of works on medicine and surgery, who will be able to quote his experience, in writing of the frequency of disease with reference to age and to sex. And, although compared with the total material which is available (or ought to be) even the large practice of the Victoria Infirmary, Glasgow, is a mere

speck, nevertheless, it is good work, and faithfully produced. To the practitioner, the definitions of disease, and the differential diagnosis, as regards the age and the sex, will be a valuable asset should this book be within his reach, as it ought to be.

To the medical statistician a development of the subject, with a larger number of cases and a corresponding wider information regarding mortality therefrom, would be of unquestioned value, the more so if Dr. Grant Andrew, in pursuing this work, were to analyse the age period one to ten years, and give the results by age periods of under one year—one to five years and five to ten years. Take, for instance, a death of a child under one year of age occurring, and the cause given as epilepsy. In classifying such a death the questions arise in the mind of the person so engaged as to the difficulty of such a diagnosis and the status of the record. Now, could a reference be made to a standard work under the name of the author of the book under notice, that undoubtedly so many cases and so many deaths had occurred in his experience at this age period from epilepsy, it would be a valuable guide for the medical statistician. It may be summarised that Dr. Grant Andrew's work is of a most useful description, and ought to be in the library of all those interested in the literature, the practice, and the statistics of medicine, surgery, and midwifery.

The Cause of Sleep. By WALTER M. COLEMAN. Berlin : Mayer & Müller. New York: The Macmillan Co. 1909. Pp. 19.

THIS is the first of a series of suggestive papers devoted to the publication of the research work of the author in mental biology. Further papers dealing with experimental work will be published on "Consciousness," "Desire," "Feeling," "Emotions," "Motives," "Mental Attitudes," "and "Mental Hygiene." In the first paper which is before us the author states that "the biology of the mental processes and functional psychology will be treated through the medium of human and comparative

physiology and natural history." This is truly a fearsome catalogue of work which Dr. Coleman has set before him. Judging by the first paper, the cause of sleep has been made the study of many years, and his conclusions and suggestive facts seem to be founded upon careful and most painstaking observations upon himself and others. The instruments he uses are of novel make, and he entirely discredits Marey's tambour as a reliable instrument where "accurate results are desired," and says this well-known appliance is only of use in "qualitative" work. By his series of illustrations in the present short paper he shows the effect of sleep upon the respiration, and much interesting research work is described. From its nature this paper is of interest only to research workers in psychological and physiological science, but its publication is of use to all such, and will do much to crystallise the many diffident ideas held upon this most abstruse of all medical problems by different authorities.

He cordially invites the criticisms of all scientists, and especially unfavourable ones, to be sent to 50 Upper Bedford Place, London, and after May, 1910, to 66 Fifth Avenue, New York.

Sleep is "caused by damping of cerebral (conscious) " energy and activity by CO_2 excess and only sometimes want of oxygen, which at the same time stimulates the lower automatic breathing centres. The conscious train of ideas is usually terminated by a visible change in respiration (this is shown by tracings on a revolving drum by no less than six figures reproduced in this little paper). These respiratory changes temporarily impede the circulation causing the CO_2 excess which produces the sleep.

His investigations into the Cheyne-Stokes breathing are new and interesting, and he has observed this condition to exist in a normal individual. The pneumographic tracings of this condition are fully given, and it will be interesting to learn if other scientists obtain similar evidence of the non-pathological significance of this symptom by means of pneumographic tracings from healthy individuals who exhibit the phenomenon of "excessive periodic" breathing.

The results obtained by the use of different instruments are fairly criticised, and the unreliability of tracings obtained through india-rubber buttons seems to be a very possible source of the many differences in results arrived at by older investigators.

Infectious Diseases: a Practical Text-book. By CLAUDE BUCHANAN KER, M.D. Ed., F.R.C.P. Ed.; Medical Superintendent, City Hospital, Edinburgh, and Lecturer on Infectious Diseases to the University of Edinburgh. Oxford Medical Publications. London: Henry Frowde; and Hodder & Stoughton. 1909. Pp. xi + 555.

THE Medical Superintendent of the Epidemic Hospital of the Municipality of Edinburgh possesses unrivalled opportunities of studying the various acute infections in the spacious wards of that magnificent institution. Dr. Ker has not been slow to avail himself to the utmost of those opportunities, and the fine volume before us contains a valuable record of his personal experience during his tenure of office as head of the Edinburgh City Hospital. To its wards are admitted cases, not only of all the diseases specifically mentioned in the schedule to the Notification of Infectious Diseases Act of 1889, but also of measles, whooping-cough, rubella, mumps, and chicken-pox, according as space is available in the many pavilions which make up the hospital. Separate chapters are allotted to measles, rubella, scarlet fever, small-pox, vaccinia, chicken-pox, typhus fever, enteric fever, diphtheria, erysipelas, whooping-cough, mumps, and cerebro-spinal fever. About these several infections the author "feels competent to express an opinion"—this is his modest way of putting it. We would say that his ripe experience would justify a claim to speak about them with authority.

In addition to the above diseases, relapsing fever is described in Chapter IX. This hardly needs the apology in the Preface—"One exception has been made in the inclusion of relapsing fever, a disease which, owing to its

protozoal origin and to its unusual course, appears to possess a special interest, which is not lessened in my own eyes by the fact that one of its less known synonyms, 'the epidemic fever of Edinburgh,' gives it a sentimental attraction to men of that school."

Dr. Ker bases his description of relapsing fever on the account given by Dr. Claud Muirhead of the last outbreak in Edinburgh in 1870—that is, three years before the discovery of the spirillum by Obermeier, and called after him *Spirochaete Obermeieri*. While Dr. Ker directs attention to an analogy between typhus and relapsing fever as to the mode of infection by contact and through close air, he endorses the view that the spirillum may be carried by bugs, as has been recently proved by Tictin. That observer found the spirillum in the bodies of bugs which had been fed on patients suffering from the fever paroxysm, and he was able to successfully infect monkeys by inoculating them with fluid obtained from squashed bugs. Karlinski also found the spirillum present in bugs taken from infected houses. Our own opinion is that fleas as well as bugs will prove to be the means of infection by inoculation not only in relapsing fever, but also in typhus, thus establishing another point of analogy between these two "dirt-diseases" of the destitute poor.

The sections on "Enteric Fever" and on "Diphtheria" are naturally the longest and fullest in the book. The author's experience of both infections is naturally most extensive—a fact which bespeaks an attentive hearing for his views.

The difficulties which attend the diagnosis of enteric fever are illustrated in a striking manner by a table on page 284, showing the ultimate diagnosis of 529 cases admitted during the past twelve years to the Edinburgh City Hospital as either suffering from enteric fever, or as suspected of having that disease ("observation cases"). In 106 instances "acute lobar pneumonia" was the final diagnosis, in 97 instances the real disease was influenza. "Broncho-pneumonia" in 45 instances, diarrhœa in 34, typhus and tubercular meningitis, each in 20; acute tuberculosis in 18, phthisis and pleural effusion, each in

12; inflammation of the female pelvic organs in 10, tubercular peritonitis in 9, appendicitis, acute rheumatism, and septicæmia, each in 7; and cerebro-spinal meningitis in 6 instances—these, severally, were the conditions really present. The Table does not reflect much credit on the diagnostic powers of some—at all events—of the medical practitioners who sent patients into the City Hospital. Dr. Ker deals gently with these wrong diagnoses. “The practitioner,” he writes, “should remember that the indiscreet administration of milk in large quantities in patients suffering from the high pyrexia, and weak digestion, in such a disease as pneumonia will often cause marked abdominal tumidity and discomfort, and is not unlikely to produce a fair imitation of the typical ‘pea-soup’ stools.” He adds:—“I am inclined to believe that the absence of the abdominal reflex may be regarded as presumptive evidence in favour of enteric, when the diagnosis lies between that disease and pulmonary conditions” (page 285).

The work abounds with practical points of this kind, and is, to our mind, the best modern text-book on the acute febrile infections.

Medical Morbid Anatomy and Pathology. By HUGH THURSFIELD, M.D., F.R.C.P., Senior Demonstrator of Medical Pathology, St. Bartholomew's Hospital, Assistant Physician to the Hospital for Sick Children, Great Ormond Street, and to the Metropolitan Hospital; and WILLIAM P. S. BRANSON, M.D., M.R.C.P., Junior Curator of the Museum, St. Bartholomew's Hospital, Assistant Physician to the Royal Free Hospital, late Assistant Physician to the East London Hospital for Children. London: H. K. Lewis. 1909. Cr. 8vo. Pp. viii + 262.

THIS volume provides a concise account of the morbid anatomy of medical diseases and a very brief account of their pathology. It is intended for students and primarily for those of St. Bartholomew's Hospital.

Marginal references are made throughout to the specimens in the museum of that hospital.

The text has evidently been written with much care. It appears to us to be extremely accurate, and to give clear and correct descriptions. We have little doubt that it should prove valuable if used, as the authors intend, for the examination of morbid specimens by those who have already studied pathological text-books.

Its danger lies only in its abuse. Students are disposed to attempt to *learn* their subject from condensed writings such as this—a habit which leads to that imperfect understanding which results from the worst form of cramming. For this, however, the authors cannot be held responsible. Properly employed, this book should prove very useful to all who wish to improve their knowledge of medical morbid anatomy by examination of museum specimens.

W. G. H.

A System of Syphilis. In Six Volumes. Edited by D'ARCY POWER, M.B. Oxon., F.R.C.S.; and J. KEOGH MURPHY, M.D., M.C. Cantab., F.R.C.S. With an Introduction by SIR JONATHAN HUTCHINSON, F.R.S. Vol. III. Visceral Syphilis, PROFESSOR WILLIAM OSLER, M.D., F.R.S., and ALEXANDER G. GIBSON, D.M., M.R.C.P. The Clinical Aspects of General Paralysis, CHARLES A. MERCIER, M.D., F.R.C.P., F.R.C.S. Yaws, PROFESSOR ALDO CASTELLANI, M.D. Some Medico-Legal Associations of Syphilis, STANLEY B. ATKINSON, M.A., M.B., J.P. Syphilis and Life Assurance, E. M. BROCKBANK, M.D., F.R.C.P. The Serum Diagnosis of Syphilis, HALPIN DAVIS, D.M., F.R.C.S., M.R.C.P. London: Oxford University Press, Henry Frowde; and Hodder & Stoughton. 1910. Royal 8vo. Pp. 279. Forty-two Illustrations.

In reviewing the third volume of "*A System of Syphilis*," edited by Mr. D'Arcy Power and Dr. J. Keogh Murphy, we at once observe that its bulk is less than that of its predecessors—in fact, it contains one-third

fewer pages. We also notice the absence of those coloured photographic illustrations which were so great an adornment in the other volumes. At the same time we are free to admit that the forty-two illustrations, both coloured and plain, are all that the most exacting critics could desire. We are pleased to find that Jonathan Hutchinson's name on the title-page now appears with the prefix "Sir," and we, as syphilologists, take this opportunity of congratulating him on his well-merited distinction.

The volume before us contains six distinct articles by separate authors. We propose to refer to each in detail.

The first is an account of "Syphilis as it affects the Viscera" of the human body. It is written by Drs. Osler and Gibson, and is full of information which no physician can afford to ignore: we do not believe that it is possible to obtain in any other monograph so complete a description of the ubiquitous manifestations of visceral syphilis. We have frequently expressed our opinion as to the necessity of medical men engaged in the practice of every domain or specialty of medicine bearing in mind the possible relation syphilis may bear to their patients' conditions, especially in obscure and complicated cases. We would ask those of our readers who may think that we lay too great stress upon this point to read Osler's and Gibson's article, and also that on "Syphilis and Life Assurance," by Dr. Brockbank, which occurs later on in the same volume. Quoting the former authors, we would remind the profession that "it has been taught that no diagnosis is complete without having considered the possibility of tuberculosis and syphilis."

Professor Osler's and Dr. Gibson's paper is not written in the clear and unambiguous style characteristic of either of them—there is a want of sequence in its text, suggestive of its having been collaborated in segments. Too frequently we have to pause and consider before we can unravel the impressions made upon our minds in order to follow the thread of the argument or the line of thought. Whilst practically all their views may safely be accepted, we are surprised to read the following sen-

tence:—"Spirochætæ, so far as we know, have not been demonstrated in gummatous lesions." On pages 63 and 135 of the first volume of this "*System of Syphilis*" several references are made to the presence of spirochætæ in gummatous lesions, and so far back as Chaudin himself the fact has been verified—that observer having found them in association with gummata. Furthermore, inoculations made on apes with material taken from gummata have repeatedly been successful in transmitting the disease. In one of these experiments—that of Hoffmann—the disease was of twenty-four years' duration. The significance and far-reaching effects of this knowledge is obvious. "*The supposed difference in infectivity between secondary and tertiary lesions is thus a quantitative and not an absolute difference.*" (The italics are ours.)

The second paper is by Charles A. Mercier on the "Clinical Aspects of General Paralysis." He describes the disease most fully, and emphasises the fact that patients of this class show signs of mental instability years previous to the more acute stage of the disorder. He also points out that the clinical aspects of general paralytic patients are becoming modified—the signs and symptoms of the disease as it occurred twenty years ago had not the same significance or relation to each other that they bear at the present time.

An amusing clerical error—possibly the irresponsible work of that scape-goat the printer's devil—appears persistently throughout the article. Dr. "*Forbes Robertson*" is alluded to as "the discoverer of a serum prepared through the medium of a goat from his *Bacillus paralyticus*." The only Forbes Robertson with whom we are acquainted lives, moves, and has his being in a different environment to that of a pathological laboratory, and expends his energies in the production of "Mice and Men," and other things calculated to amuse and elevate the moral qualities of his fellow-man. We assume the gentleman referred to by Dr. Mercier to be, of course, the distinguished pathologist of the Scottish Asylums, and author of "*The Pathology of General*

Paralysis of the Insane"—to wit, Dr. W. Ford Robertson.

Professor Aldo Castellani writes on "Yaws," and his paper is interesting inasmuch as it contains the description of the *Treponema pertenue* (Castellani), discovered by him in 1905, and believed to be the ætiological factor in the production of the disease. For the rest, his description of yaws is orthodox, and were it not for the confusion that used to exist between this disease and syphilis there would be no more justification for its inclusion in a work devoted to the study of syphilis than leprosy or lupus. Professor Castellani finds that the prognosis of yaws is worse in children than in adults, whereas Powell stated that "the negroes in the West Indies and Africa, and also the Polynesians had the habit of inoculating the children when young to prevent its development in later life," presumably because they believed it to be milder and safer than for their children to contract the disease when older. Powell also stated that the children would continue their games and run about if permitted to do so. We should have liked to have read the author's opinion of the curative effects of pyrexial attacks on yaws, but as he makes no allusion to it we suppose he considered such outside the range of practical therapeutics.

"Some Medico-legal Associations of Syphilis" is the heading of the fourth paper—Stanley B. Atkinson, M.A., M.B., J.P., member of the Inner Temple, being its author. The legal aspect of the question is dealt with from the point of view of a barrister, and pertains mainly to such general matters as the risks medical men might incur by declaring to third parties that any given individual had the disease. We are warned not to make statements that would leave us open to an action at law. Personally we do not believe that medical men entering on the practice of their profession have passed through the portals of their College without having imbibed those principles governing professional reticency and ethics which are sufficient to secure them against rendering themselves likely subjects for actions for slander, libel,

or other indiscretions of a professional character. We would have welcomed an article from a gentleman of Dr. Atkinson's many qualifications, both in his dual capacity as a medical man and as a barrister, containing a brief *résumé* of those measures adopted in various countries as the State Legislation relative to, and the prevention of, syphilis—possibly he could have suggested some legal device by which a modified Contagious Diseases Act might be re-inaugurated. We are not acquainted with any measures of this kind whereas the general subject of his contribution, excellent though it be, is, we believe, familiar to all.

The fifth subject dealt with is entitled "Syphilis and Life Assurance," by E. M. Brockbank. It occupies sixty-four pages of the volume, and contains a bibliography of four pages. Dr. Brockbank first deals with the medical aspect of the subject, which includes a compilation of the opinions of syphilologists and medical referees to insurance companies. Next, the "actuarial" views of the disease, and, finally, he reviews the customs of different assurance experts in dealing with syphilitic risks, and sums up the entire matter in his concluding remarks. Without any hesitation or reservation we affirm at once that this contribution to the "System of Syphilis" will prove to be one of the most valuable contained in the entire six volumes. The Editors were distinctly well advised to include in one volume the two articles "Visceral Syphilis" and "Syphilis and Life Assurance." It will prove the work of reference in all assurance offices—it will be indispensable. Apart from assurance work, and the responsibilities of medical officers, Dr. Brockbank's paper is full of useful information and statistics which will appeal to general practitioners.

The concluding paper is written by Haldin Davis, M.A., D.M., and is on the subject of "The Serum Diagnosis of Syphilis." In the twenty-eight pages at his disposal he traces from its conception the principle of the serum diagnosis of syphilis. His description of so technical and difficult a subject is a model of what such

a paper should be—a layman could read with interest and full comprehension the subject as expounded by the author. Though the serum diagnosis of syphilis is a comparatively new study, yet he has added to his paper a bibliography containing twenty-eight references.

We can strongly recommend this book to our readers, and, as already stated, we believe it will be indispensable in all insurance offices and to all engaged in medical insurance duties.

S. S.

Hypnotism and Treatment by Suggestion. By J. MILNE-BRAMWELL, M.B., C.M. London, New York, Toronto, and Melbourne: Cassell & Co. MCMIX. Cr. 8vo. Pp. xii + 216.

THIS small work places the leading facts and uses of medicinal hypnotic suggestion before us. The cases, which are suitable and have been benefited by treatment by the author's methods, are numerous and varied, and seem to include everything from painless dental extraction, amputations of limbs, and the removal of tumours, to almost all the psychoneurotic states, insanities and obsessions to which the human sojourn in the flesh is heir. There are a large number of recoveries set out as due directly to the author's treatment by hypnotic suggestion, and to anyone anxious to read the interesting storiettes of cases with successful treatment and recovery the present work will be found interesting reading. Let us, however, well bear in our minds that most, if not all, of the mental cases in which we would wish to try hypnotic suggestion are singularly invulnerable to the hypnotist's attacks. They won't be hypnotised, and, therefore, treatment by suggestion fails. The theories as regards the hypnotic state are concisely referred to by the author, and contain much information. It is singular to find so many cases of paranoia who have a decided dread of hypnotism. I recently saw a man patient who carried a loaded revolver in his pocket to protect him from the attacks of "the hypnotists." Undoubtedly one sees cases of neuras-

thenia and obsession where the treatment by hypnotic suggestion in skilled hands seems to offer a prospect of good results in carefully selected cases. In cases of pronounced insanity it has seldom or never been of use, and the number of recoveries recorded in Dr. Milne-Bramwell's present work is very remarkable. It is regrettable that they have all taken place seemingly in patients not inmates of asylums or mental hospitals. Treatment of those insane patients already in asylums by hypnotic suggestion has always been more or less unproductive of results, and I feel sure that the scepticism which exists as regards the value of this treatment rests greatly upon this fact for its origin and continuance.

The author in his preface says he places his work before the medical public with the aim throughout "to give such practical information as might be really valuable to those who wish to employ suggestion in their practice."

The work under review is carefully written, and has many references to well-known specialists and authors of works on psychological medicine; but we would like more precise and general instructions laid down by the author as to the modes and best methods of inducing the hypnotic state, and also a slightly fuller recognition of the dangers and difficulties of his subject.

Lectures on Surgical Nursing. By E. STANMORE BISHOP, F.R.C.S. Eng.; Honorary Surgeon Ancoats Hospital, and Gynaecological Surgeon Jewish Memorial Hospital, Manchester; Member of Council Obstetrical Section, Royal Society of Medicine. Bristol: John Wright & Sons, Ltd. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1909.

THE above small book is a collection of twelve lectures dealing with the duties of a surgical nurse before, during, and after an operation.

The chapters in which Mr. Bishop confines himself to the practical points of nursing are excellent, particularly that on the "Preparation for Operation in a Private

House." The chapter on "Examination of Urine, Fæces, and Gastric Contents" should be left out, for it is in many places inaccurate, and such work is outside the duties of a nurse.

The printers and publishers have done their work admirably.

YEAR-BOOKS FOR 1910.

Whitaker's Peerage, Baronetage, Knightage, and Companionage for the Year 1910. London: 12 Warwick Lane, Paternoster Row, E.C. Demy 8vo. Pp. cxiv+812.

THIS handsome work arrived too late for notice in our January number. There is no material change in the manner of the volume, but several interesting additions have been made, both in the "Introduction" and in the "Directory" itself. In the former, a concise description of the ceremonies attending the Coronation in 1902 has been inserted, the section on Indian and African titles has been enlarged, and the "Official Glossary" now contains a full and satisfactory account of "Court Dress" (at pages 90 and 91). In the Directory itself, the Companions of the Indian Orders have been included for the first time. The letters "S. O." have disappeared from the country addresses, following the example of the British Postal Guide. Another omission we must regret—a list of Roman Catholic Archbishops and Bishops in the British Empire has disappeared owing to the death of the late Bishop Johnson, Auxiliary to the Archbishop of Westminster. It seems that Bishop Johnson edited the list. Surely a successor could be found to carry on the work, and so complete the volume as a book of reference.

As in past years, a romance is met with now and then in the pages of this work. For example, under the heading "Twisden, Baronet, Rev. Sir John Francis Twisden, 11th Bt. of Bradbourne (Eng. 1666), M.A.," we read: "The 1st Bt. was 2nd son of 1st. Bt. Twysden

line. The Btcy. became apparently extinct in 1841, but a decision of the High Ct. in 1909 established the legitimacy of the marriage of the 2nd son of the 5th Bt., from whom the present baronet descends" (page 713).

A Short Handbook of Cosmetics. By DR. MAX JOSEPH, Berlin. Third Edition, with 151 Recipes. Authorised English Translation. London: Rebman. 1910. Pp. ix + 87.

It is refreshing to meet with a comparatively novel medical subject in these days of Dictionaries, Lexicons, Systems, Encyclopædias, and such like. And so we read with avidity Dr. Max Joseph's admirable monograph on the Cosmetics of the skin, the hair, the nails, and the mouth, in its English dress.

H. Paschkis, of Vienna, was the first to place the subject of Cosmetics on a scientific footing, and Dr. Joseph acknowledges his indebtedness to the third edition of that author's "*Kosmetik für Aerzte*," which was published in Vienna in 1905, as well as to Eichhoff's "*Praktische Kosmetik für Aerzte und gebildete Laien*" (Wien: Deuticke, 1904). It was in every way fitting that these important works on the hygienic handling of the skin and hair should emanate from the Austrian capital, in which a great school of dermatology sprang up many years ago under the fostering care of Hebra, and flourished in later times with that famous dermatologist's son-in-law, Kaposi, as its head. That the science of Cosmetics is as yet hardly recognised in Great Britain and Ireland must be admitted with regret. Even in the little book before us we have evidence of the fact. The translator is anonymous save for his initials, "D. J. G.," and address, "Lanark"; and his Preface opens with the apologetic sentence: "When Dr. Max Joseph requested me to prepare an English version of his book on Cosmetics, I felt that the profession in this country might be inclined to scoff at the subjects with which it deals." Fortunately, he became convinced afterwards "that there is a demand on the part of many practitioners for a fuller and more

scientific knowledge of the hygiene of the skin and hair, and the treatment of their minor affections." We will not reveal the translator's identity—suffice to say he has done his part of the work right well.

Dr. Joseph is careful to point out that Cosmetics is not a special science: it is merely a department of dermatology. This is the right way to view the subject, which is thus brought within the domain of legitimate Medicine.

So far as the skin is concerned, the important cosmetic agents considered are water, baths, soap, fats, glycerin, emulsions, alkalies, acids, sulphur, and paints. Of the whole series, water is the most important—that is, soft water, as the author is careful to explain.

The dehydrating action of glycerin is duly noted at page 27, but the unpleasant results of the process, such as smarting, are easily avoided by diluting the glycerin ever so slightly. For example, after washing the hands and rinsing them in clean water, no burning sensation is caused if the glycerin is applied while the hands are still wet.

One of the main features in the book is the large number of elegant prescriptions which it contains—151 in all. An interesting point about these is the insertion of the commercial fancy names by which they are known in the fashionable world.

The book is beautifully printed. There are, however, a few misprints, such as "sacharin" (page 82), "berorcini" (page 56), "Liebrreich" (page 15), "Kindersiefe" (page 16), "Paschki" (page 28).

NOTE BOOKS FOR 1910.

AMONG the handy note books for the present year may be mentioned the "Doctor's Diary" and the "Nurse's Diary," published by Messrs. Scott & Bowne, Ltd., 10-11 Stonecutter Street, London, E.C., and printed by the Chandos Press. The fact that these small, neat, and compact diaries serve also the purpose of an advertisement of "Scott's Emulsion" does not detract from their value. Their pages contain a great deal of extremely useful information for both doctors and nurses.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

DUBLIN HOSPITALS TUBERCULOSIS COMMITTEE.

A QUARTERLY meeting of this Committee was held in the Royal College of Physicians of Ireland, on Tuesday, January 4, 1910. Present :—Sir John Moore (in the chair), Sir Arthur Chance, Drs. Cox, Parsons, Peacocke, and Kirkpatrick, and Sir William J. Thompson, Hon. Secretary. There were also present, as visitors, Sir Charles Cameron, C.B., and Lieutenant-Colonel Flinn, Medical Inspector of the Local Government Board for Ireland.

The following resolution was passed in silence :—

“ Resolved—that, at this their first meeting since the tragic and lamented death of the Hon. Archibald Ian Gordon, the members of the Dublin Hospitals Tuberculosis Committee offer their most respectful and heartfelt condolence to His Excellency the Lord Lieutenant of Ireland, K.T., and the Countess of Aberdeen, on the occasion of the loss of their dearly loved youngest son, one who, standing on the threshold of manhood, gave promise of a successful and brilliant career, and for whom a bright vista of happy domestic life seemed just about to open.”

The Hon. Secretary read the following letter from the Queen Victoria Jubilee Institute for Nurses :—

(Copy)

“ QUEEN VICTORIA’S JUBILEE INSTITUTE FOR NURSES,

“ December 22nd, 1909.

“ Sir William Thompson, M.D.,

“ Hon. Secretary,

“ Dublin Tuberculosis Nurses.

“ DEAR SIR,—I am desired by the Committee of the Institute to forward you the following Report of the result of the inspection of the Dublin Tuberculosis Nurses on October 8th and 15th, 1909 :—

“ The work of the two Tuberculosis Nurses in Dublin is most

encouraging, and much good work is being done. The books and equipment were correct.'

" I am,

" Yours faithfully,

" (Signed) A. C. LOWE,

" *Secretary.*"

The District Nurse for Terenure reported that during seven months ended November 30, 1909, she had attended 28 cases and paid 277 visits. Her report went on to state :—

" Of 22 tuberculosis cases reported in the four months ending August 21st, only one remains under treatment.

" One died at home, and one, the mother of seven children, was sent to the Hospice, Harold's Cross, and died there.

" Both houses were disinfected, all clothes, personal and bed clothes, stoved, and the walls of the house lime-washed.

" Isolation in the district is almost an impossibility, and one can only instruct and impress on the other members of the family the great need, for their own sakes, of care and cleanliness, and of plenty of fresh air and sunshine.

" These few cases only represent a very small portion of my work in this district, but as prevention is better than cure we are working with that object always before us, and, on the whole, although the work progresses slowly, it is none the less surely.

" GEORGINA McWILLIAM,

" (Queen's Nurse.)

" *Dec., 1909.*"

The following Report of the work done by two Tuberculosis District Nurses in Dublin during nine months ended November 20, 1909, was submitted :—

No. of cases attended (old cases, 125 ; new cases, 172) - 297

Of these 39 died ; the remainder are
under treatment or have been dealt with
as follows :—

..	visits paid	-	-	-	4,939
..	average weekly attendances	-	-	-	82
..	cases notified from hospital	-	-	-	62
..	.. otherwise	-	-	-	108
..	.. improved so much that they were able to return to work again	-	-	-	14
..	.. sent to the Royal National Hospital, New- castle, Co. Wicklow	-	-	-	19

No. of cases sent to South Dublin Union for special		
Tuberculosis treatment	- -	20
„ „ waiting to be admitted to Newcastle Hospital		2
„ „ sent to other Sanatoriums	- - - -	6
„ „ gone or sent to friends in the country		13
„ „ admitted to North Dublin Union Hospital	-	7
„ „ admitted to South Dublin Union Hospital	-	3
„ „ admitted to the Hospices for the Dying	-	23
„ „ attended who have been at Newcastle Hospital		19
„ „ sent to the country to convalesce	- -	8
„ deaths at patients' home	- - - -	25
„ „ in institutions	- - - -	14
„ families removed to more healthy homes	- -	7
„ rooms disinfected	- - - -	88
„ insanitary houses reported	- - - -	10
„ sputum flasks distributed	- - - -	48
„ families received nourishment	- - - -	104
„ patients who received clothes, shoes, bedding, &c.	-	80
„ families for whom rent is being paid while the breadwinner is at Newcastle or in the Dublin Unions		16
„ children of parents suffering from tuberculosis sent to the country through Fresh Air Fund	-	87
„ children boarded out while the mother is in hospital		3
„ patients or their families for whom work has been obtained	- - - -	11
„ children sent to schools or institutions after parents' death	- - - -	2
„ each family, rough average	- - - (about)	6
„ families occupying one room	- - -	104
„ families in which more than one person are affected		55
Average weekly income	- - - -	15/-
Average weekly income when breadwinner is ill	- - -	5/-

THE ANTİKAMNIA TABLET CALENDAR, 1910.

THE Antikamnia Chemical Company, 46 Holborn Viaduct, London, E.C., have combined Art with Business in their Calendar for the current year, which forms a very ornamental object for the physician's study.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR CHARLES BALL, F.R.C.S.I.

General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF SURGERY.

President—J. LENTAIGNE, P.R.C.S.I.

Sectional Secretary—A. J. BLAYNEY, F.R.C.S.I.

Friday, November 19, 1909.

THE PRESIDENT in the Chair.

THE PRESIDENT said that last year in opening the session of the Section he had spoken of the "present position and future prospects of the Academy," and had then been compelled to draw a rather gloomy and depressing picture. He had had to deplore the indolence and apathy which, in his opinion, were steadily destroying the life of the Academy. He thought he could not do better, in opening the present session, than return to the subject. Looking back over the work done during the past session, he was sorry he could see no evidence of improvement in respect of attendance. The number of total attendances at the six meetings of the Section had been 152, or an average of about twenty-five at each meeting, as compared with 167, or an average of about twenty-eight the previous session. An analysis of the attendances showed that the Fellows had been a little more attentive in the past session, but it was a curious thing that no attendances were recorded by students, as against 21 in the previous year. He was, however, glad to say that the record of work done was a much more cheerful one. During the past session they had had many valuable papers, and many cases of extreme interest had been exhibited, which made him all the more surprised that the attendances had been so small. He considered that the record of papers and exhibits brought forward was one of which any Society like theirs might well be proud, but small, in view of the fact that there were over seventy men in Dublin engaged in the teaching and practice of surgery, as well as hundreds of students to whom the meetings of the

Section should be of great importance. He asked those present to assist in improving this state of affairs.

Operative Treatment of Fracture.

MR. R. LANE JOYNT read a paper on the above. He pointed out that the result of X-ray examination of united fractures of the femur which had been treated by the common methods showed in many cases an amount of deformity which was little short of that seen in a number of museum specimens which were formerly regarded as examples of mal-union. The functional result in most of these cases was very bad. The only way in which shortening could be prevented, and the fragments got into perfect line, was by operation. Even when complete asepsis was not obtained, suppuration was usually slight, and the results were much better than when the older methods were employed. A striking feature after the fixation of the fragments was the rapid disappearance of pain. He then described minutely the details of the operation for wiring, and of that in which Lane's steel plates are used. He showed a number of instruments which he had found very useful in carrying out these operations.

Operative Treatment of Fracture, Illustrated by X-ray Photographs.

MR. W. I. DE C. WHEELER read a paper with this title, and showed four cases where simple treatment had failed, but continuity and union were afterwards established by the use of screws and metal plates. In one case the operation was performed three and a half months after a compound fracture of the tibia and fibula which failed to unite, and which rendered the limb useless. After operation complete union was obtained, the wound, which was partially open, healing, over six screws holding two plates. The fibula was wired. A second case presented himself for treatment (eleven months after the accident) for a false joint of the tibia and an ununited fibula following simple fracture. Firm union was obtained after excision of the joint, and the introduction of screws, wire and plates. The third case was fracture of the surgical neck of the humerus, with a marked tilt outwards of the upper fragment; the upper end of the lower fragment was imbedded in the muscles under the coracoid process. A fortnight's treatment under the guidance of X-rays failed to reduce the deformity. A single plate supported by an encircling wire was introduced to hold the fragments in position. The last case was that of a

child aged four, who sustained a long spiral oblique fracture of the femur. Extension under an anæsthetic and immobilisation of the fracture in plaster-of-Paris failed to reduce the overlapping of the bones. Finally operation was performed, and two plates and three encircling wires were introduced. All the wounds healed by first intention.

THE PRESIDENT OF THE ACADEMY said they had had from Mr. Lane Joynt one of the best demonstrations he had ever seen of the application of practical mechanics to surgery; and he thought it a pity that there were not means of teaching something of the subject to medical students. What had struck him most about the instruments shown was their size and business-like capability. The majority of instruments used for bone surgery were small and incapable. He had often speculated as to how the long American spindle turnscrew could take out a screw that could not be touched with a short one, and until that night he had never heard anything like a reasonable explanation.

SIR THOMAS MYLES recalled the fact that he had in 1884 brought forward a suggestion for the operative treatment of fractures. A quarter of a century had passed since then, and thirty years since the introduction of antiseptic surgery, and yet it was only to-day that the operative treatment of fractures was becoming general. They had taken a long time to get out of the routine methods of procedure. Mr. Joynt had shown them that, even when suppuration ensued, if proper provision was made for drainage, the results of operative treatment were infinitely better than those of non-operative treatment no matter how well carried out. It was hardly yet time to dogmatise as to which of the operative methods was the best. Most of them had tried the three methods—the method of wiring, the method of the Lane plates, and the Parkhill method, which was capable of being used in many cases with less disturbance than the method now being discussed. The particular advantage of any operative method was not shown so much in fracture of the middle of the shaft of the femur as in fractures in the neighbourhood of the joints. He had had five cases of recent fracture under his care. In the case of a man of fine physique who declined to be operated on, and for whom he did everything to make the non-operative treatment a success, the result was a shortening of one and three-quarter inches, and the patient had not recovered the functional use of the knee-joint. In another case of fracture and dislocation of the head of the humerus, the bone was got back into

the socket after tremendous difficulty, and anyone could recognise that nothing but bold operative treatment could possibly have given the man a limb of the least use. After two years the patient had a little stiffness in the shoulder. Comparing the results in operative and non-operative treatment, he did not think anyone would hesitate in advising the operative.

MR. MAUNSELL cited cases in which he had got good results by wiring, but with great difficulty, whereas when he had used screws and plates in identical cases the operation was not at all a hard one. In a case of compound fracture the plate had come away about five weeks after the operation, but it had not interfered with the result. He did not, however, think that wire had been outdone by screws, operative treatment was not required in every case, as even in the femur he had got good results with plaster, especially in young people, which he did not think could be improved on by operation. He thought it would be unfair to rush into operation before trying other methods. Cases such as those mentioned by Sir Thomas Myles might have to be operated on from the first, but he had had recently two cases of fractured femurs, both of which had gone out after treatment, with no shortening.

MR. HAUGHTON said those Surgeons who viewed the conditions of fracture through X-ray examination became more and more convinced of the necessity for an improved method of treatment. He held personally that it was even more important to take an X-ray picture after the application of splints than before they had been applied. If the position was not satisfactory they could then proceed to operative treatment. He used a small screw-driver on small bones for fear of splitting, but the long screw-driver was more convenient.

THE PRESIDENT said he had been speculating as to how he would treat the case of fracture of the lower end of the femur just above the knee joint in which they might have one of the fragments presenting backwards toward the skin of the popliteal space. He would like to know what incision Mr. Lane Joynt would propose to make for such a fracture, or in separation of the epiphysis in that situation. He remembered two cases of the kind which had been treated by distinguished surgeons, and the results had been lamentable. He himself believed that a good deal could be done by posture. He had treated cases by keeping the leg bent to a right angle, but the position was extremely irksome, and the results, though very much better

than former ones, were not to be compared with what they could now get by suturing or plating. If they were to operate at all in a case of fracture, the sooner it was done the better: delay added to the difficulty of the operation and interfered with the beneficial result. He had found the Parkhill clamp difficult to employ: it left several holes in the skin, and there was always greater danger of sepsis. The greatest danger of sepsis was not during the operation, but during the first week or two after the operation.

MR. LANE JOYNT, in reply, said that in approaching the knee for a fracture in the lower third, they would have to go from the outer side, and probably apply a plate. It was easier to work from the outside than from the inner, and he thought also that they would be able so to avoid the capsule of the joint and the prolongation of the synovial membrane. He would not, however, object to opening the joint, as it could be done without necessarily destroying it. If they were going to place a plate on the bone in the neighbourhood of the joint, it should be, if possible, not in a place exposed to friction. He would not use wire there no matter how tempting it might look. As regards Parkhill's method, he looked upon it as being superseded in some cases; but there were others, notably where they might have a compound fracture of the tibia with excessive suppuration and necrosed bone, in which it would be folly to attempt to suture or screw with Lane's plates, or wire. Wire was not outdone by any means. There were times, as when dealing with fractures in young children, when they should use fine wire. In such cases the shortening would be the same, when the patient was fully grown, as in childhood.

MR. WHEELER also replied.

SECTION OF OBSTETRICS.

President—HENRY JELLETT, M.D., F.R.C.P.I.

Sectional Secretary—GIBBON FITZGIBBON, M.D.

Friday, December 3, 1909.

THE PRESIDENT in the Chair.

Exhibits.

Myomatous Uterus becoming Carcinomatous.

DR. GIBSON exhibited a specimen of myomatous uterus with necrosis of one large tumour and carcinoma of the endometrium.

The patient, from whom the uterus had been removed a few weeks previously, was over sixty years of age, and twelve years past the menopause. She knew that she had the tumour for many years, and had been given to understand that it would never do her any harm after the change of life. She had never been pregnant, and enjoyed good health up to four weeks before he saw her, when she suffered from a severe attack of uterine hæmorrhage. She had not had any discharge from the menopause to that time. She had no pain, and except that she thought she had been getting thinner for the past five or six months, she noticed no change in her general health. Examination showed a large myomatous uterus with the cervix unaltered. There was no hæmorrhage, but when the sound was passed the uterine cavity bled freely. He decided to perform panhysterectomy. When the abdomen was opened, as the uterus felt peculiarly soft it was grasped with a museau-forceps in what seemed to be the most solid part. The forceps, however, tore a hole in the surface of the uterus, and a large quantity of yellowish creamy fluid escaped. Fearing that the uterus would tear, it had been carefully packed off, so that none of this fluid got into the peritoneal sac. It proved, however, not to be pus. The removal of the uterus was easy, but scattered everywhere over the pelvis he found nodules which were deposits of carcinoma. These and the condition of the uterus showed the great extent to which the disease had extended without any symptoms. The patient did very well. He also exhibited a specimen of carcinoma of the cervix removed by Wertheim's operation. The patient was twenty-five years of age; married four years. Four months before he saw her she had a perfectly normal labour, and suffered from nothing either before or after her babe was born. She had no bleeding until six weeks before he saw her, when she described a creamy discharge with streaks of blood. The disease in the cervix was advanced, and the specimen showed the very large amount of tissue which could be removed with the uterus by this operation. The patient made a good recovery, and was the fourth under the age of thirty for whom he performed Wertheim's operation this year.

SIR WILLIAM SMYLY said it was very difficult to prophesy in myoma. He recalled a case in which the patient had had a uterine tumour for thirty years. Six months after seeing her it was fixed in the pelvis with malignant disease.

PROFESSOR ALFRED SMITH cited a case in which, after some hesitation as to giving advice, he dilated the uterus, and found what he thought to be a tiny ulcer. He scraped away sufficient for a microscopic examination. The pathologist pronounced it to be malignant disease, rapidly growing, in which the prognosis would be very bad. It was, however, a typically ideal case for good results, and he removed the uterus, but within nine months the patient was dead. The case brought home to him the fact that the useful information given by the pathologist could be extended to state whether the tumour was actively growing or not.

THE PRESIDENT (DR. JELLETT) said the opinion given twenty years ago as to a tumour not doing harm might have been perfectly correct then, in view of the risk of operation; but now it is possible and right to advise the performance of operation on account of the great improvement in their technique.

DR. GIBSON replied.

Ovarian Pregnancy.

DR. E. HASTINGS TWEEDY exhibited a specimen of ovarian pregnancy, probably the first exhibited in Ireland. A. H., aged twenty-five; married four years; three children, last five and a half months ago (June, 1909); one abortion. Menstruated September 18, 1909, first and only time since delivery. November 5th.—Acute pain in right lower abdomen, from which she almost fainted. Examined at 4 p.m. November 5th in extern department. Very tender mass the size of a hen's egg to the right of retroverted uterus. Left appendages normal. Tumour on right could not be definitely localised to ovary or tube.

Diagnosis.—Extra-uterine pregnancy.

November 13, 1909.—In the interval had several attacks of pain. Morning of November 13 pain more severe, and associated with slight uterine hæmorrhage. On admission, tumour increased to twice its former size, otherwise physical examination the same.

Operation.—November 16, 1909.—Ether. Right Oöphorectomy. Both tubes and left ovary microscopically perfectly normal. Blood clot about three inches in diameter completely obscured right ovary. This was clamped and removed, ovarian tissue being cut through in removal.

The case had fulfilled all the conditions laid down for ovarian

pregnancy. He thought the specimen was worth public acknowledgment by the Section.

Elephantiasis Vulvæ.

DR. TWEEDY also exhibited a specimen of elephantiasis of the vulva, specific in origin. M. B., aged thirty; married fourteen years; last pregnancy ten years ago; three dead-born children: one child lived two hours. Wassermann's reaction for syphilis positive. (Reported from Sir A. Wright's Laboratory.) Has always had a yellowish purulent vaginal discharge. For ten years has had a tumour of the vulva, which has grown slowly but steadily.

Physical Examination.—Hypertrophy of labia minora, measuring about two and a half by three and a half inches. Considerable œdema. Induration and œdema involved labia majora, and extended down to ischio-rectal fossa on either side.

Operation.—Excision. Interrupted catgut sutures.

DR. ROWLETTE said the specimen of ovarian pregnancy showed to the naked eye the *corpus luteum*. A section taken through the *corpus luteum* and the edges of the blood-clot showed a proliferation of the cells of the *corpus luteum* and the mass of blood-clot in which three or four villi were seen. The other specimen consisted of lax connective tissue covered with a thin skin. The laxity was probably due to an increase of the lymphatic spaces.

THE SECRETARY quoted a case reported in the November number of *The American Journal of Obstetrics*. On the day the woman expected to be delivered she complained of pains. These went off, and twelve days later she went into hospital. A tumour was found strongly resembling an ovarian cyst. On opening into it a fœtus was found. This was delivered and resuscitated. The child was up to term, and free from deformities, and the patient made a complete recovery.

THE PRESIDENT said the case was one in which they must suppose a person capable of making a mistake until he could conclusively prove that he had not made one. It was not a question of distrusting the powers of diagnosis of Dr. Tweedy and Dr. Rowlette, but rather a question as to whether the whole profession would accept the power of the Section to express an opinion. He, therefore, urged Dr. Tweedy to refer the specimen to a committee. His own opinion was that it was an ovarian pregnancy.

DR. TWEEDY, in reply, said he was quite agreeable that the diagnosis should be confirmed.

SIR WILLIAM SMYLY proposed that Dr. Tweedy's specimen be sent to the Reference Committee for report.

PROFESSOR ALFRED SMITH seconded, and the motion was passed unanimously.

Painless Labour.

DR. SPENCER SHEILL reflected over the usual suffering of women in labour, and quoted three exceptions to the rule he had observed in his own practice—in one of them the process was entirely painless. He argued: if nature sometimes allows of childbirth without pain, why should the obstetrician not endeavour to follow her good example? He spoke of the gain to surgery of chloroform and ether, and their disadvantages in labour, at any rate in the long first stage. The expectant mother of to-day is, according to him, less able or willing than her mother or grandmother to bear bravely the suffering entailed, due largely to the evils of civilisation and to the present-day pursuits of women. For this reason he had used in his practice during the past year the scopolamin-morphin treatment in some nineteen cases, and gave his results, which he believed are the first of the kind published in Ireland. The many contradictory reports from users of it since Krönig's first paper on the subject are due he believed largely to great differences in the quality of the drugs used. He quoted the opinion of some who still believe in such a thing as "death from labour shock" *per se*, and stated, if it be true, "painless labour" might be a factor in lessening maternal mortality. It is generally believed that scopolamin and hyoscin are exactly similar, and the author quotes various authorities on chemistry who support this view—among them Martindale, Binz, and even the British Pharmacopœia. True, pure hyoscin and scopolamin are *chemically* similar, but exist in three stereoisomeric forms—viz., dextro, lævo and racemic modifications. The important point is that the "lævo" acts much the strongest *on peripheral nerve endings*. He believed that some writers use the word scopolamin to denote this form, and hyoscin to denote the other weaker forms. The processes of manufacture can change the stronger form into the weaker. Messrs. Burroughs & Wellcome have assured the author that their "Tabloid" hyoscin hydrobromide consists only of the pure "lævo" form. Scopolamin, he stated, is also a respiratory and circulatory stimulant, and so counteracts some

undesirable effects of morphin. The doses are from $\frac{1}{300}$ to $\frac{1}{100}$ grain of scopolamin and $\frac{1}{8}$ to $\frac{1}{6}$ grain of morphin. The scopolamin is sometimes repeated, the morphin seldom or never. They are used in the first stage when pains are getting strong, quietness is then insisted upon, and the room is darkened. The patient may sleep or get drowsy, but labour proceeds unaffected. Loss of memory for the time being is the principal after-effect he had noted. He had also seen flushing of the face and quickened pulse. He had not observed asphyxia neonatorum, post-partum hæmorrhage, &c., recorded by others. A case of chorea gravidarum was very favourably affected. The author believed the drug would be useful in eclampsia in counteracting the depressant action of morphin alone, and preventing the morphin from checking uterine contractions. He warned them against the use of hard water in making the solution, as alkalies will precipitate the alkaloids, and so reduce the dose given. He concluded by stating that scopolamin-morphin has many advantages, but doubted if these were not outweighed (except in a limited number of cases) by certain disadvantages; and advised more extended trial in Ireland by the large maternities.

DR. TWEEDY said he had observed that if the vagina was tightly plugged labour progressed almost painlessly, no doubt owing to pressure on the cervical ganglia.

DR. FREELAND said they first commenced to give scopolamin at the Rotunda in September, 1908. They now gave $\frac{1}{120}$ scopolamin, with $\frac{1}{6}$ morphin, and repeated in $\frac{1}{80}$ grain doses without the morphin. They had given it in about forty cases. One baby was born slightly asphyxiated, but it breathed after a hot bath. The others were born perfectly normal. None of the women showed any abnormalities after labour, except one who got out of bed when not watched. He thought the use of forceps had been less frequent, and he did not think the treatment prolonged labour. The majority of the patients went asleep for an hour or two after injection, and wakened up with more or less demonstration during a pain, and slept between pains. They had three absolutely painless deliveries.

DR. SOLOMONS said that amongst other cases which he had treated by the scopolamin method was one which had occurred a few days previously. In that case he gave scopolamin hydrobromide gr. $\frac{1}{20}$, and morphin sulphate gr. $\frac{1}{6}$ when the os was three-quarters dilated. The patient had been very rowdy, but

after the injection she slept, and was surprised when informed of the birth of the baby.

THE PRESIDENT said he had given the drug in one case, and had obtained a painless labour. There was some hæmorrhage after delivery, and he found it was from a laceration about the vagina. This bore out Dr. Sheill's remark that women under scopolamin-morphin anæsthesia not appreciating the pain were apt to strain very hard.

DR. SHEILL, in reply, said he thought the plugging of the vagina only substituted one pain for another. The cases mentioned showed the disadvantages of the method, which required constant medical supervision.

SECTION OF MEDICINE.

President—WALTER G. SMITH, M.D., F.R.C.P.I.

Sectional Secretary—F. C. PURSER, M.D., F.R.C.P.I.

[]

Friday, January 7, 1910.

DR. J. MAGEE FINNY in the Chair.

Glycosuria and Graves's Disease.

DR. DRURY read a paper on this subject. [It will be found at page 97.]

THE CHAIRMAN said the subject had been a matter of considerable discussion, as the origin of sugar in the urine had not been satisfactorily settled. He had taken the opportunity of examining several cases of Graves's disease with relation to the question as to whether glycosuria was present or not, and it had been a surprise to him to find that a patient, who had no sugar at first, developed sugar. This was almost at the same time that Dr. Drury's case was in hospital. The subject was a girl, aged eighteen. She had been under his care and daily observation since the autumn. It was not until nearly six weeks after admission that sugar was discovered in the urine, and since then it had been discovered on most of the occasions when observations were made. Sometimes it was in distinct quantities; at other times it could barely be demonstrated; the previous day a quantitative analysis had showed .4 per cent. It was a well-marked case of Graves's disease, with all the phenomena peculiar to the condition. The discovery of the glycosuria made one rather anxious, as the opinion given by most writers was that it was a very bad prognostic.

and added greatly to the fatality of a case of Graves's disease. The fear, however, had not been justified in the case, which was proceeding without any very great loss of weight.

PROF. W. H. THOMPSON said the mere appearance of sugar in the urine was not, after all, saying very much. One had to consider why the sugar appeared, and it was quite acknowledged that disease of the pancreas and } total extirpation of the pancreas were very important factors in the production of severe and usually fatal glycosuria. About the connection between it and the thyroid not very much was known physiologically, but from the evidence brought forward he thought there could be no doubt that there must be some orderly connection between disease of the thyroid gland and glycosuria.

DR. MATSON recalled a case of exophthalmic goitre of very rapid course. The urine on admission was free of sugar. About the tenth day sugar and diacetic acid were found in the urine. Just before death the sugar disappeared, but the peculiar fruity smell from the patient's breath still persisted.

DR. LUMSDEN cited a case which had been under observation for four or five years. The woman had, at first, signs of Graves's disease. She suffered from tachycardia, when the pulse ran up to as much as two hundred. About nine months before death she developed glycosuria and signs of undoubted diabetes. She passed up to two hundred ounces of urine in the twenty-four hours, and had a corresponding thirst. Diacetic acid was also present. She wasted rapidly, and died with well-marked diabetic coma.

DR. CRAIG said it had been taught for a quarter of a century that glycosuria might be expected to be found in Graves's disease, and he had made it a rule to have an examination of the urine made for sugar. It occasionally appeared, but in much fewer instances than might be expected from the paper to which they had listened.

SIR JOHN MOORE said that the presence of glycosuria in some cases of Graves's disease lent support to the view that the primary lesion in that malady was connected with the thyroid gland (a hyperthyrea), regard being had to the modern doctrine as to the interdependence of the thyroid gland and the pancreas in respect to function.

Suggestions as to the Treatment of Gastric Ulcer.

DR. CRAIG read a paper so entitled. [It will be found at page 104.]

THE CHAIRMAN said the raw egg and milk treatment of Lenhartz was very valuable, and he had been satisfied with it.

DR. KIRKPATRICK felt convinced that, apart from any medicinal or dietetic treatment, the most important thing for the patient was absolute rest. He thought it was even more difficult to know when permission might be given for the patient to move than to know when the diet might be increased. The condition of the teeth was a matter of very great importance. If a patient had a septic mouth, there was very little use in treatment until the condition of the mouth was improved. It seemed to him, *à priori*, that rectal feeding, especially at the beginning, ought to give admirable results; but he thought the cases would be few in which it would be tolerated for any length of time, and, even where it was borne satisfactorily, it was really only starvation. Occasionally, for the first two or three days, patients were benefited and pain relieved by withholding all food from the mouth, and giving just enough by the rectum to support life. The most difficult of all points in connection with gastric ulcer was to decide what should be done for patients with gastric hæmorrhage. Immediate operation had not been found satisfactory, but if they waited for a second hæmorrhage it might prove fatal.

DR. MATSON spoke of the administration of olive oil, which was supposed to be seized upon by the hydrochloric acid, which it thus neutralised.

PROF. THOMPSON thought their ideas of the quantity of hydrochloric acid that ought to be normally present in the gastric juice were much too low. Want of teeth and bad mastication would be predisposing causes to fermentation and the production of hyperacidity. It had recently been shown that there was a normal return of bile and pancreatic juice from the duodenum into the stomach, particularly where there was a large amount of acidity. The giving of foods which promoted the free secretion of acid was a means of causing such return, and connected with the treatment by olive oil. Rest in the recumbent position kept the food more in the part of the stomach where the digestion ought to go on.

DR. LUMSDEN spoke in approval of the ice-bag, and agreed as to the importance of the question of the teeth. He had found the results of gastro-enterostomy most admirable.

DR. CRAIG replied.

SANITARY AND METEOROLOGICAL NOTES.

VITAL STATISTICS.

For four weeks ending Saturday, January 1, 1910.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended January 1, 1910, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 25.4 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,142,308. The deaths registered in each of the four weeks ended Saturday, January 1, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality:—

TOWNS, &c.	Week ending				Aver- age Rate for 4 weeks	TOWNS, &c.	Week ending				Aver- age Rate for 4 weeks
	Dec. 11	Dec. 18	Dec. 25	Jan. 1			Dec. 11	Dec. 18	Dec. 25	Jan. 1	
22 Town Districts	23.2	21.7	18.2	25.4	22.1	Lisburn -	18.2	40.9	13.6	36.4	27.3
Armagh -	34.4	34.4	6.9	20.6	24.1	Londonderry	19.3	18.1	18.1	21.7	19.3
Ballymena	38.3	19.2	33.5	43.1	33.5	Lurgan -	26.6	13.3	26.6	13.3	20.0
Belfast -	29.4	23.9	19.4	25.9	24.6	Newry -	8.4	21.0	12.6	37.8	20.0
Clonmel -	5.1	25.6	—	15.4	11.5	Newtown- ards	—	17.2	11.4	28.6	14.3
Cork -	18.5	23.3	11.6	28.8	20.6	Portadown -	5.2	25.8	31.0	31.0	23.2
Drogheda -	20.4	36.8	20.4	20.4	24.5	Queenstown	19.8	6.6	13.2	—	9.9
Dublin (Reg. Area)	22.0	19.4	19.6	25.9	21.7	Sligo -	9.6	14.4	4.8	43.2	18.0
Dundalk -	23.9	16.0	8.0	8.0	14.0	Tralee -	21.1	26.4	15.9	15.9	19.8
Galway -	23.3	23.3	23.3	27.2	24.3	Waterford -	11.7	33.1	13.6	11.7	17.5
Kilkenny -	14.7	9.8	9.8	39.3	18.4	Wexford -	18.7	18.7	23.3	23.3	21.0
Limerick -	17.8	15.0	16.4	21.9	17.8						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, January 1, 1910, were equal to an annual rate of 1.5 per 1,000, the rates varying from 0.0 in thirteen of the districts to 5.7 in Newtownards, the 5 deaths from all causes for that district including one from whooping-cough. Among the 192 deaths from all causes registered in Belfast are 13 from whooping-cough, one from diphtheria, and one from diarrhoea. Of the 42 deaths from all causes registered in Cork is one from enteric fever. Of the 16 deaths from all causes registered in Limerick, one is from whooping-cough, and one of the 6 deaths from all causes registered in Waterford is also from whooping-cough. Of the 7 deaths from all causes registered in Galway, one is from typhus. Included in the 5 deaths from all causes registered in Drogheda is one from enteric fever; and one of the 3 deaths from all causes registered in Tralee is from whooping-cough.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 398,356, that of the City being 306,902, Rathmines 36,567, Pembroke 28,506, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, January 1, 1910, amounted to 232—131 boys and 101 girls; and the deaths to 205—103 males and 102 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 26.8 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the Area, the rate was 25.9 per 1,000. During the fifty-two weeks ending with Saturday, January 1, the death-rate averaged 22.0, and was 2.7 below the mean rate for the corresponding portions of the ten years 1899–1908.

The total deaths included one death from diphtheria, one from whooping-cough, 3 deaths from scarlet fever, 4 deaths from influenza, 2 deaths from enteric fever, and 4 deaths from diarrhoeal

diseases of children under 5 years of age. The deaths of 2 children under 5 years of age from enteritis and one from *gastro-enteritis* were also registered. In each of the three preceding weeks deaths from diphtheria had been 0, 2, 0; deaths from enteric fever had been one, 0, and 3; deaths from diarrhoeal diseases had been 4, 1, and 0; deaths from influenza had been one, one, and 6; deaths from scarlet fever had been one, one, and one; and deaths from whooping-cough had been 2, 2, and 2.

Of 22 deaths from pneumonia (all forms) there were 15 deaths from broncho-pneumonia, one death from lobar pneumonia, and there were 6 deaths from *pneumonia* (not defined).

The deaths (21) from all forms of tuberculous disease include 15 from tubercular phthisis (*phthisis*), 3 from tubercular meningitis, and 3 deaths from other forms of the disease. Deaths from all forms of tuberculous disease in the three preceding weeks had been 25, 21, and 18 respectively.

There was one death from carcinoma, one death from sarcoma, and 2 deaths from cancer, malignant disease (undefined).

Nine deaths of prematurely born infants were recorded.

Of 16 deaths attributed to diseases of the brain and nervous system, 7 were those of infants under one year of age from *convulsions*.

Diseases of the heart and blood-vessels caused 37 deaths, and bronchitis caused 39 deaths.

Of 2 deaths from accidental causes one was of a child aged 4 years from burning, and one of an infant by suffocation in bed.

In ten instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 6 children under 5 years of age (including 5 infants under one year old), and the deaths of 4 persons, aged 60 years and upwards.

Seventy-one of the persons whose deaths were registered during the week were under 5 years of age (49 being infants under one year, of whom 19 were under one month old), and 56 were aged 60 years and upwards, including 29 persons aged 70 and upwards, of whom 5 were octogenarians, and one (a man) was stated to have been aged 91 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," and the "Tuberculosis Prevention (Ireland) Act, 1908," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. R. A. O'Donovan, Medical Superintendent Officer of Health for Kingstown Urban District; and by Dr. Bailie, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended January 1, 1910, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epi- demic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Group	Pyrexia (origin uncertain) ^a	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Whooping-cough	Cerebro-spinal Fever	Tubercular Phthisis (<i>Phthisis</i>)	Total
City of Dublin	Dec. 11	-	•	•	13	1	-	5	-	-	5	10	-	•	-	•	58
	Dec. 18	-	•	•	8	1	-	1	-	-	6	12	1	•	-	•	46
	Dec. 25	-	•	•	16	-	-	1	-	1	12	6	-	•	-	•	36
	Jan. 1	-	•	•	5	2	-	8	-	1	12	5	-	•	-	4	37
Rathmines and Rathgar Urban District	Dec. 11	-	•	•	1	-	-	6	-	-	-	-	-	•	•	•	7
	Dec. 18	-	•	•	3	-	-	1	-	-	1	1	-	•	•	•	6
	Dec. 25	-	•	•	-	-	-	1	-	-	-	-	-	•	•	•	1
	Jan. 1	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
Pembroke Urban District	Dec. 11	-	4	-	-	-	-	-	-	-	1	-	-	-	-	•	5
	Dec. 18	-	-	-	1	-	-	-	-	-	-	-	-	-	-	•	1
	Dec. 25	-	•	-	-	-	-	-	-	-	-	-	-	-	-	•	3
	Jan. 1	-	1	-	-	-	-	1	-	-	-	-	-	2	-	•	4
Blackrock Urban District	Dec. 11	-	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-
	Dec. 18	-	•	•	2	-	-	-	-	-	-	-	-	•	-	•	2
	Dec. 25	-	•	•	-	-	-	1	-	-	-	-	-	•	-	•	1
	Jan. 1	-	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-
Kingstown Urban District	Dec. 11	-	•	•	-	-	-	-	-	-	-	-	-	•	•	-	-
	Dec. 18	-	•	•	-	-	-	-	-	-	-	-	-	•	•	-	-
	Dec. 25	-	•	•	-	-	-	-	-	-	-	-	-	•	•	-	-
	Jan. 1	-	•	•	-	-	-	-	-	-	-	2	-	•	•	-	2
City of Belfast	Dec. 11	-	•	•	14	-	-	5	1	-	-	12	-	•	-	12	46
	Dec. 18	-	•	•	11	-	-	3	-	1	1	9	-	•	-	27	52
	Dec. 25	-	•	•	10	-	-	3	1	-	5	5	1	•	-	6	31
	Jan. 1	-	•	•	13	-	-	1	-	-	9	-	-	•	-	15	38

^a Continued Fever.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended January 1, 1910, 4 cases of measles were admitted to hospital, 5 were discharged, and 17 cases remained under treatment at its close.

Four cases of scarlet fever were admitted to hospital, 8 were discharged, and 71 cases remained under treatment at the close of the week. This number is exclusive of 21 convalescents from the disease under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital. At the close of the 3 preceding weeks the cases in hospital had been 95, 97, and 78 respectively.

One case of typhus was admitted to hospital during the week, there was one death, and 6 cases remained under treatment in hospital at its close.

Eleven cases of diphtheria were admitted to hospital, 8 were discharged, there were 2 deaths, and 38 patients remained under treatment at the close of the week. The cases in hospital at the close of the 3 preceding weeks had numbered 30, 38, and 37 respectively.

Seven cases of enteric fever were admitted to hospital during the week, 2 were discharged, there was one death, and 44 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 6 cases of pneumonia were admitted to hospital, 6 were discharged, there were 2 deaths, and 29 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, January 1, in 76 large English towns, including London (in which the rate was 16.2), was equal to an average annual death-rate of 16.6 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 18.9 per 1,000, the rate for Glasgow being 20.8 and for Edinburgh 15.9.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended January 1. From this report it appears that of a total of 43 cases notified, 17 were of scarlet fever, 9 of phthisis, 11 of diphtheria, and 6 of erysipelas.

Among the 414 cases of infectious diseases in hospital at the close of the week were 230 cases of scarlet fever, 79 of measles,

48 of phthisis, 8 of whooping-cough, 29 of diphtheria, one of enteric fever, 10 of erysipelas, 3 of chicken-pox, 2 of cerebro-spinal fever, and one of puerperal fever.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. $53^{\circ} 20'$ N., Long. $6^{\circ} 15' W.$, for the Month of December, 1909.

Mean Height of Barometer,	-	-	-	29.613 inches.
Maximal Height of Barometer (14th, at 9 p.m.),				30.477 „
Minimal Height of Barometer (2nd, at 9 p.m.),				28.387 „
Mean Dry-bulb Temperature,	-	-	-	40.9° .
Mean Wet-bulb Temperature,	-	-	-	39.4° .
Mean Dew-point Temperature,	-	-	-	37.5° .
Mean Elastic Force (Tension) of Aqueous Vapour,				.230 inch.
Mean Humidity,	-	-	-	88.3 per cent.
Highest Temperature in Shade (on 10th),				56.3° .
Lowest Temperature in Shade (on 21st),				19.5° .
Lowest Temperature on Grass (Radiation) (21st),				16.2° .
Mean Amount of Cloud,	-	-	-	65.2 per cent.
Rainfall (on 21 days),	-	-	-	4.408 inches.
Greatest Daily Rainfall (on 5th),	-	-	-	1.029 inches.
General Directions of Wind,	-	-	-	W., S.W.

Remarks.

A cold, wet month, with snowstorms on the night of the 5th, 6th, and the forenoon of the 19th. There had not been such a large rainfall in December in Dublin since 1876, when, however, 7.566 inches fell, compared with 4.408 inches in the present month. As regards temperature, December, 1909, was a month of extremes—from the 3rd to the 8th inclusive, the screened thermometer never rose to 40° , and snow lay in the city on the 6th, 7th, and 8th. On the 9th a fresh S. W. wind sent the thermometer up to 53.2° , and next day the maximum for the month— 56.3° —was reached. An anticyclonic easterly wind prevailed from the 11th to the 17th, and temperature became gradually lower. On the night of the 18th a heavy fall of rain, snow, and hail occurred, and this was followed by a snowstorm on the forenoon of the 19th, after which keen frost set in. On the 20th the thermometer did not rise higher than 31.2° in Dublin, and during the succeeding night the minimum was 19.5° in the screen and 16.2° on the snow. At 1 p.m. of the 21st a rapid

thaw set in, rain and sleet falling subsequently to the amount of almost an inch (.969 inch). On Christmas night a mild spell set in, which lasted to the close of the month, with a brief interruption on the forenoon of the 29th, when a calm and fog prevailed. A fine lunar rainbow appeared at 11 p.m. of the 30th.

In Dublin the arithmetical mean temperature (41.4°) was 0.6° below the average (42.0°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 40.9° . In the forty-five years ending with 1909, December was coldest in 1878 (M.T. = 32.8°), and in 1874 (M.T. = 36.8°); warmest in 1898 (M.T. = 47.6°), and in 1900 and 1905 (M.T. = 47.1°).

The mean height of the barometer was 29.613 inches, or 0.262 inch below the corrected average value for December—namely, 29.875 inches. The mercury rose to 30.477 inches at 9 p.m. of the 14th, having fallen to 28.387 inches at 9 p.m. of the 2nd. The observed range of atmospheric pressure was, therefore, 2.090 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 40.9° , or 1.2° below the value for November, 1909. Using the formula *Mean Temp.* = *Min.* + (*Max.* — *Min.* $\times .52$), the value was 41.5° , or 0.6° below the average mean temperature for December, calculated in the same way, in the thirty-five years, 1871–1905, inclusive (42.1°). The arithmetical mean of the maximal and minimal readings was 41.4° , compared with a thirty-five years' average of 42.0° . On the 10th the thermometer in the screen rose to 56.3° —wind, S.W.; on the 21st the temperature fell to 19.5° —wind, calm. The minimum on the grass was 16.2° on the 21st. There were 8 days of frost in the screen, and 13 nights of frost on the grass were recorded.

The rainfall was 4.408 inches, distributed over 21 days. The average rainfall for December in the thirty-five years, 1871–1905, was 2.250 inches, and the average number of rainy days was 17. The rainfall, therefore, was nearly double, while the rainy days were considerably in excess of the average. In 1876 the rainfall in December was very large—7.566 inches on 22 days. In 1868 (which was otherwise a fine and dry year), 4.749 inches fell on as many as 27 days. On the other hand, in 1867, only .771 inch was measured on 13 days; in 1885, only .742 inch on 10 days; in 1892, only .795 inch on 10 days; and in 1871, only .797 inch on 15 days.

High winds were noted on 13 days, and attained the force of a gale on three occasions—the 3rd, 21st, and 28th. The

atmosphere was more or less foggy in Dublin on the 4th, 5th, 7th, 8th, 21st, 22nd, and 29th. Hail fell on the 2nd, 3rd, 6th, and 19th; snow or sleet on the 3rd, 5th, 6th, 19th, and 21st. A lunar halo was seen on the 1st, 22nd, and 31st; a lunar corona on the 12th, and a lunar rainbow on the 30th.

The rainfall in Dublin during 1909 amounted to 26.939 inches on 193 days, compared with 23.753 inches on 198 days in 1908, 26.994 inches on 218 days in 1907, 22.807 inches on 203 days in 1906, 25.277 inches on 193 days in 1905, 22.180 inches on 189 days in 1904, 31.601 inches on 228 days in 1903, 29.375 inches on 203 days in 1902, 26.075 inches on 179 days in 1901, only 16.601 inches on 160 days in 1887, and a thirty-five years' (1871-1905) average of 28.000 inches on 198 days.

At the Normal Climatological Station in Trinity College, Dublin, Mr. William J. Good reports that the mean height of the barometer was 29.615 inches, the range of atmospheric pressure being from 30.482 inches at 9 p.m. of the 14th to 28.390 inches at 9 p.m. of the 2nd. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 41.4° . The arithmetical mean of the daily maximal and minimal temperatures was 41.7° . The screened thermometers rose to 57.0° on the 10th and again on the 28th, and fell to 16.5° on the 21st. On the 21st also the grass minimum was 10.1° . Rain fell on 20 days to the amount of 4.200 inches, the greatest fall in 24 hours being .990 inch on the 5th. On the 21st .940 inch was recorded. The duration of bright sunshine, according to the Campbell-Stokes recorder, was only 21.8 hours, of which 2.8 hours occurred on the 8th and also on the 24th. The mean daily sunshine was only 0.7 hour. The mean temperature of the soil at 9 a.m. was 40.9° at a depth of 1 foot; at a depth of 4 feet it was 44.4° .

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall in December was 6.260 inches on 18 days. Of the total amount 1.500 inches fell on the 1st, 1.300 inches on the 5th, and 1.130 inches on the 21st. From January 1st to December 31st, 1909, rain fell at Knockdolian on 160 days, to the total amount of 33.004 inches.

Dr. Stewart Ross reports a rainfall of 6.270 inches on 20 days at Clonsilla, Greystones, Co. Wicklow, the heaviest fall in 24 hours being 1.5 inch on the 1st. The mean temperature of December was 39.95° , the extremes being—highest, 53° on the

11th, lowest, 22° on the 21st. The rainfall during 1909 at Clonsilla amounted to 32.455 inches on 159 days. The greatest daily measurement was 1.5 inches on the 1st Dec.

Dr. Launcelot T. Burra reports a rainfall of 5.805 inches on 19 days at the Royal National Hospital for Consumption for Ireland, Newcastle, Co. Wicklow, the maximal fall in one day being 1.250 inches on the 5th. The mean temperature of the month was 40.9° (mean max., 45.7° , mean min., 36.1°), and the extremes were—highest, 53.4° on the 28th; lowest, 23.0° on the 21st. The mean dry bulb thermometer reading at 9 a.m. and 9 p.m. was 41.3° .

Mr. T. Bateman reports that the rainfall at the Green, Malahide, Co. Dublin, was 3.915 inches on 17 days. The greatest fall in 24 hours was .865 inch on the 5th. The mean shade temperature was 36.0° , the extremes being—highest, 53° on the 10th; lowest, 14° on the 20th.

Dr. Christopher Joynt, F.R.C.P.I., recorded a rainfall of 4.740 inches on 21 days at 21 Leeson Park, Dublin. On the 5th, 1.160 inches were recorded, and on the 21st the measurement was 1.050 inches. The total rainfall for the year was 27.290 inches.

Mr. Robert O'B. Furlong, C.B., returns the rainfall at Cloneevin, Killiney, at 4.37 inches on 20 days. The maximal fall in 24 hours was 1.40 inches on the 5th. The average December rainfall for the 24 years (1885–1908) was 2.342 inches on 17.6 days. Snow fell on the 5th, 18th, and 19th. Since January 1, 1909, 25.36 inches of rain have fallen at this station on 174 days, compared with 25.66 inches on 196 days in 1908.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 21 days to the amount of 4.04 inches, 1.24 inches being measured on the 5th. Temperature ranged from 55.0° on the 9th, 10th, and 27th to 20° on the 21st. The mean shade temperature was 40.9° Fahrenheit. Heavy falls of snow occurred on the 5th and 18th. Hail and sleet showers fell on the 6th.

At Cork, according to Mr. W. Miller, the December rainfall was 3.49 inches on 16 days, the measurement being 0.74 inch less than the average. The greatest daily rainfall was 1.47 inches on the 21st. The year's rainfall at this station was 29.94 inches on 170 days, the total being 8.06 inches under the average, while the rainy days were 37 in defect.

The Rev. Arthur Wilson, M.A., reports that rain fell on 26 days at the Rectory, Dunmanway, Co. Cork, to the amount of 7.41 inches. The heaviest falls were 1.90 inches on the 21st and

1.27 inches on the 9th. A cold month, with some very wet days and frequent frosts. Some snow on the 7th and 18th. The rainfall for the year was 47.88 inches.

Mr. W. Holbrow returns the rainfall at Derreen, Kenmare, Co. Kerry, at 6.82 inches on 22 days. The maximum in 24 hours was 1.03 inches on the 21st. Frost occurred on 6 nights, the thermometer falling to 12° on 2 nights. The total rainfall in 1909 at Derreen was 55.61 inches on 180 days. In August and September only 1.10 inches fell on only 14 out of 61 days, whereas in October alone the measurement was 10.96 inches on 25 days.

The rainfall at the Ordnance Survey Office, Phoenix Park, Dublin, was 3.735 inches on 23 days, the maximum in 24 hours being .600 inch on the 5th. The total amount of sunshine was 37.2 hours, the largest daily amount was 4.7 hours on the 24th. The thermometer fell to 8.8° in the screen on the early morning of the 21st.

RAINFALL IN 1909.

At 40 Fitzwilliam Square, West, Dublin.

Rain Gauge :—Diameter of Funnel, 8 in. Height of top—Above ground, 1 ft. 4 in. ; above sea level, 50 ft.

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which .01 or more was recorded
	Inches	Inches	Date	
January,	1.264	.223	10th	14
February,	.593	.249	28th	8
March,	2.693	.439	28th	19
April,	4.078	1.581	3rd	22
May,	1.470	.377	17th	12
June,	1.963	.601	23rd	9
July,	3.316	.532	24th	22
August,	1.300	.367	21st	13
September,	1.816	.633	27th	15
October,	2.613	.494	23rd	24
November,	1.425	.664	13th	14
December,	4.408	1.029	5th	21
Total	26.939	1.581	April 3rd	193

The rainfall was 26.939 inches, or 1.061 inches less than the average annual measurement of the thirty-five years, 1871-1905, inclusive—viz., 28.000 inches.

It is to be remembered that the rainfall in 1887 was very exceptionally small—16.601 inches. In 1870 only 20.859 inches

fell; in 1884 the measurement was 20.467 inches; in 1883 it was 20.493 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant downpour in 1886, when 32.966 inches—or as nearly as possible double the fall of 1887—fell on 220 days. In 1900 the rainfall was 34.338 inches, or 6.338 inches in excess of the average for the thirty-five years, 1871–1905. Only twice since these records commenced has the rainfall in Dublin exceeded that of 1900—namely, in 1872, when 35.566 inches fell on 238 days, and in 1880, when 34.512 inches were measured on, however, only 188 days. In 1908 the rainfall was 23.753 inches on 198 days.

In 1909 there were 193 “rain-days” or days upon which not less than .005 inch of rain (five-thousandths of an inch) was measured. This was 5 under the average number of rain-days, which was 198 in the thirty-five years, 1871–1905, inclusive. In 1868 and 1887—the warm, dry years of recent times—the rain-days were only 160, and in 1870 they were only 145.

On two occasions in 1909 did one inch of rain fall on a given day in Dublin—viz., April 3rd, 1.581 inches, and December 5th, 1.029 inches. In 1901, the rainfall only once exceeded one inch, but on that occasion (November 11th) the measurement was 2.037 inches. In 1902, 1.342 inches fell on July 25th, and 2.075 inches on September 2nd. In 1903 the maximal daily rainfall was .966 inch on September 10th. In 1904, 1.092 inches fell on May 31st, and 1.197 inches on September 12th. The excessive rainfall on August 25th, 1905, is especially noteworthy—it amounted to 3.436 inches in Dublin (Fitzwilliam Square). It was the ninth occasion only since 1865—that is, in 45 years inclusive—upon which 2 inches have been measured in Dublin at 9 a.m. as the product of the preceding 24 hours’ precipitation. The previous excessive falls were—August 13th, 1874 (2.482 inches); October 27th, 1880 (2.736 inches); May 28th (1892, 2.056 inches); July 24th, 1896 (2.020 inches); August 5th, 1899 (2.227 inches); August 2nd, 1900 (2.135 inches); November 11th, 1901 (2.037 inches); and September 2nd, 1902 (2.075 inches). On no previous occasion within the past 45 years had 3 inches or upwards been measured.

Included in the 193 rainy days in 1909 are 20 on which snow or sleet fell, and 30 on which there was hail. In January hail was observed on 3 days, in February on 3 days, in March on 9 days, in April on 2 days, in May on 1 day, in July on 1 day, in August on 1 day, in October on 3 days, in November on 3 days, and in

December on 4 days. Snow or sleet fell on 2 days in January, 3 days in February, 7 days in March, 1 day in April, 2 days in November, and 5 days in December. A thunderstorm occurred once in July and twice in August. Thunder was heard without visible lightning once in March. Lightning was seen once in March and May, four times in October, and twice in November.

The rainfall in the first six months of 1909 was 12.061 inches on 84 days. In the second six months it was 14.878 inches on 109 days.

The rainfall was distributed quarterly as follows :—4.550 inches fell on 41 days in the first quarter, 7.511 inches on 43 days in the second, 6.432 inches on 50 days in the third, 8.446 inches on 59 days in the fourth quarter.

More or less fog prevailed on 33 occasions—5 in January, 3 in February, 5 in March, 3 in April, 1 in August, 6 in September, 1 in October, 2 in November, and 7 in December. High winds amounted to gales (force 8 or upwards, according to the Beaufort scale) on 12 occasions—3 in January, 1 in February, 1 in March, 1 in April, 3 in October, and 3 in December.

Solar halos were seen on 24 occasions, a lunar halo on 16 nights, a lunar corona on 8 nights. Aurora borealis was seen once in March, May, and November, and twice in October.

Mr. Robert O'Brien Furlong, C.B., sends the following notes :—

The rainfall of 1909 at Cloneevin, Killiney, Co. Dublin, was 25.36 inches on 174 days. August was the driest month, with .84 inch on 11 days; December the wettest, with 4.37 inches on 20 days. February had fewest "rain" days—namely, 8; March had the greatest number—namely, 22.

The average rainfall of 24 years (1885–1908) at this station was 27.500 inches on 185.9 days. The driest year was 1887, with 17.64 inches on 148 days; the wettest was 1900, with 35.35 inches on 205 days.

The greatest number of wet days in any year of the series was 219 in 1903; the smallest number of wet days in any year of the series was 148 in 1887.

The rainfall for the last 6 years was as follows :—

1901	22.14 inches on 182 days
1905	27.68 ,, 180 ,,
1906	22.34 ,, 201 ,,
1907	25.94 ,, 203 ,,
1908	25.66 ,, 196 ,,
1909	25.36 ,, 174 ,,

Abstract of Meteorological Observations taken at Dublin (40 Fitzwilliam Square, West) during the Year 1909.

MONTH	Abs. Max.	Date	Abs. Min.	Date	Mean Daily Max.	Mean Min.	Rainfall	Rain Days	Mean Height of Barometer	Highest Pressure	Date	Lowest Pressure	Date	Prevalent Winds
January	53.2	1st & 18th	31.7	16th	46.9	38.4	"	14	30.090	30.654	4th	"	14th	W., S.W.
February	55.2	4th	28.0	14th	46.8	38.6	.593	8	30.130	30.656	13th	28.864	9th	W., S.S.E.
March	55.3	24th	25.8	4th	45.9	35.7	2.693	19	29.516	30.195	12th	29.463	18th	N.W., E.S.E.
April	68.0	10th	34.4	8th	55.0	42.1	4.078	22	29.884	30.435	7th	28.879	22nd	S.W., S., S.E.
May	72.7	21st	33.1	2nd	60.1	45.1	1.470	12	30.057	30.355	13th	29.221	26th	E., W.
June	67.1	14th	42.1	7th	61.2	49.1	1.963	9	30.013	30.449	17th	29.224	22nd	N., N.W., N.E.
July	73.2	3rd	45.1	28th	65.2	53.1	3.316	22	29.910	30.305	19th	29.236	25th	W., W.N.W., N.W.
August	77.1	12th	45.5	30th	66.2	53.8	1.300	13	30.002	30.330	11th	29.315	23rd	W., S.W.
September	64.5	19th	40.7	9th	59.5	48.0	1.816	15	30.061	30.383	14th	29.518	6th	W., N., N.W.
October	66.7	3rd	30.0	30th	56.8	45.7	2.613	24	29.688	30.304	31st	29.651	5th	S.W., W.
November	56.8	3rd	28.2	16th	48.0	38.0	1.425	14	30.040	30.503	24th	29.062	29th	W., S.W., W.N.W.
December	56.3	10th	19.5	21st	45.6	37.1	4.408	21	29.613	30.477	14th	29.075	2nd	W., S.W.
Extremes, Totals, and Means	77.1	Aug. 12th	19.5	Dec. 21st	54.8	43.7	26.939	193	29.917	30.656	Feb. 13th	"	Dec. 2nd	W., S.W., N.W.

January 4, 1910.

JOHN WILLIAM MOORE, M.A., M.D., D.P.H., Dubl.; D.Sc. Oxon.; F.R.C.P.I.;
F. R. Met. Soc.

PERISCOPE.

LITERARY INTELLIGENCE.

"THE PRACTICE OF SURGERY," by W. G. Spencer, Surgeon to the Westminster Hospital, and G. E. Gask, Assistant Surgeon to St. Bartholomew's Hospital, has just issued from the press. This work contains 1,250 royal octavo pages, but its predominating feature is the number and excellence of its illustrations, amounting to 700 black and white figures, 28 skiagram plates, and twenty coloured plates. The Museums of St. Bartholomew's Hospital, and the Westminster Hospital, as well as other Museums, have been freely drawn upon for good specimens. In announcing the publication of this work, the publishers express their belief that it will generally be conceded to be one of the finest productions, from the point of view of both letter-press and illustrations, of recent surgical literature.

In addition to the above, a new edition of Galabin's "Midwifery," under the editorship of the author and of Dr. G. F. Blacker, Obstetric Physician to University College Hospital, is going through the press, and will be in the hands of students before the Summer Session. This book, which has had a great vogue among generations of past and present students, is being almost re-written. Dr. Lawrence, Curator of the Museum at University College Hospital Medical School, has prepared most of the drawings.

Another popular work is that on "Diseases of Children," by Dr. Goodhart and Dr. Still, Professor of Diseases of Children at King's College Hospital. For the first time in its long history illustrations will be introduced. The work will be published during February.

On each of the three foregoing publications the imprint is to be that of J. & A. Churchill.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

"Tabloid" Thyroid Gland. (Standardised.)

AMONG the various animal substances employed in modern therapeutics, preparations of the thyroid gland occupy a prominent position. In the great majority of recorded cases of successful treatment "Tabloid" Thyroid Gland has been used. It represents the whole substance of carefully selected, healthy glands of the sheep, and contains the unaltered, undiminished, essential activity of the normal thyroid gland. "Tabloid" Thyroid Gland, as now issued by Messrs. Burroughs, Wellcome & Company, of London, is standardised by chemical means controlled by physiological test, so as to ensure that the desiccated gland substance, of which each product represents a definite amount, contains not less than 0.2 per cent. of iodine in organic combination. "Tabloid" Thyroid Gland is issued in bottles of 100. The following strengths are available:—Gr. $\frac{1}{2}$ (0.032 gm.); gr. $1\frac{1}{2}$ (0.097 gm.); gr. $2\frac{1}{2}$ (0.162 gm.); gr. 5 (0.324 gm.); 0.1 gramme and 0.3 gramme.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

MARCH 1, 1910.

PART I.

ORIGINAL COMMUNICATIONS.

ART. VI.—*The Treatment of Syphilis by Intra-muscular Injections of Mercury.*^a By GEORGE S. WALTON, M.D.
Univ. Dubl.

For many years oral medication to the point of salivation was the one recognised method of treating syphilis. Then came fumigation and inunction, the former of which had a great vogue for a time. Inunction, though regarded as an excellent method of introducing mercury into the system rapidly in severe cases, has never become very popular in this country because of the difficulty of performing it, and also on account of its messiness.

The treatment by intra-muscular injections was introduced into this country from Germany some twenty years ago. For a time it was employed by many, but, owing to faulty technique, impurity of the preparations employed, the method fell into disuse.

Within the last few years a slight revival of the method has taken place in this country, but so far it has failed to secure the recognition which it deserves.

^a A Thesis read for the Degree of Doctor of Medicine in the University of Dublin, December 18, 1909.

At the Liverpool Skin Hospital the treatment by intramuscular injections has been extensively carried out during the past five years—the results having been so satisfactory that the oral administration of mercury has been almost entirely abandoned.

The forms of mercury used are:—

1. Metallic mercury in the form of grey oil, which contains 40 per cent. of mercury by weight.

2. Calomel, suspended in sterilised olive oil. This is reserved for very severe cases.

Grey oil is the form almost exclusively used. The formula is:—

Purified mercury	-	-	40 grammes.
Sterilised anhydrous lanoline	-	12	„
Sterilised white vaseline	-	13	„
Sterilised vaseline oil	-	35	„

Of this oil a full dose is 5 minims, which is equivalent to 2.5 grains or approximately 16 c.gms. of mercury.

The method of administration is as follows:—

After disinfection of the skin a platino-iridium needle 3.5 cm. long, or, for very stout patients, 7 cm. in length, is plunged deeply into the gluteal muscles about the mid-point of an imaginary line drawn between the anterior superior iliac spine and the top of the intergluteal furrow. This region is, as a rule, free from important vessels and nerves, and the injection is not likely to cause discomfort in sitting, cycling, or riding. After the needle has been introduced into the buttock, an empty hypodermic syringe is fitted to it and exhausted. In this way one finds out immediately whether the needle has penetrated a blood-vessel. This is a rare occurrence, but if blood should be drawn into the hypodermic syringe the needle should be withdrawn, thoroughly cleansed, and introduced at another point. If no blood is drawn, Barthelemy's syringe is taken, and, being charged with the required amount of grey oil, is fitted to the needle and the injection is made by slow, steady pressure. The grey oil should be slightly warmed and well shaken up

before charging the syringe. Syringe and needle are then withdrawn with a rapid movement in one piece, and the site of the injection is massaged for a minute or two to facilitate the distribution of the grey oil between the muscular strata. The site of injection is then covered with wool and collodion. The injections should be made in the right and left buttocks alternately.

The injection of grey oil is as a rule painless, any discomfort that may arise from it being a little stiffness in the buttock for two or three days afterwards.

Dosage.—In order to determine the most advantageous dose of mercury when treating syphilis by injections of grey oil, Barthelemy and other authorities in Paris made a series of observations. The therapeutic value of the dose was gauged by estimating its effect on the condition of the blood, urinary excretion, and the patient's weight. Their conclusions may be summed up as follows:—

The quantity of mercury injected should bear a definite relation to the patient's weight, thus, for a man weighing eight to nine stone, they found that 8 to 9 centigrammes of metallic mercury (7 c.gm. = 1 grain nearly) injected once a week for six weeks gave the best results: after the fifth injection there was a tendency for the red blood corpuscles to diminish, and if more than six injections were given the hæmoglobin decreased also. Following this course of six injections an interval of non-treatment for two months was necessary. In the case of a big man weighing thirteen stone the dose may be increased to 14 or 16 c.gm.

Frequency with which the dose should be repeated.—This depends on many considerations, chief of which are the patient's general condition, the severity and stage of the disease, and the reaction to treatment.

As a rule it will be found best to give full doses to robust patients with acute symptoms once weekly for six or eight weeks, or until the disease begins to recede, provided always that the patient is not losing weight. Then the dose is reduced by one-half to 8 c.gm. of mercury, and

continued weekly, or a full dose is administered each fortnight until all the remaining symptoms have disappeared. In patients of poor physique half doses are administered from the beginning. After a full course, which usually extends over three months, no more mercury is administered, unless there be a return of symptoms, for three months, when a second course of half doses, administered according to circumstances, weekly or fortnightly, should be given. Three courses should be administered in a year.

During treatment patients should be urged to pay special attention to the teeth and gums. Carious teeth should be removed before mercury is first injected, and frequent use of a tooth-brush and of an astringent mouth-wash should be observed. The mouth-wash used in the British army for syphilitics undergoing injection treatment is very useful.

The formula is:—

1. \mathcal{R} Plumbi acetatis, $\mathfrak{z}\text{i}$;
Aquæ destillatæ, $\mathfrak{z}\text{v}$.
2. \mathcal{R} Aluminis sulphatis, $\mathfrak{z}\text{i}$;
Aquæ destillatæ, $\mathfrak{z}\text{v}$.

Mix Nos. 1 and 2 and filter. The filtrate should be used after dilution with nineteen parts of water.

Smoking and alcohol should be forbidden, and the patient should be urged to lead a healthy life. Attention to the bowels and frequent baths are advisable. The patient's weight should be carefully recorded each week, and any serious falling off should be regarded as a sign to stop or lessen the dosage of mercury until the weight becomes constant.

The urine should be examined frequently, always before the injections are commenced, and frequently during the course of treatment, to ascertain whether or not albuminuria is present, and also whether the mercury is being eliminated satisfactorily. Mercury is eliminated by the kidneys very slowly. It first appears in the urine in appreciable quantities a few days after the adminis-

tration of the second dose of grey oil, and it has been found as late as three months after the last of a series of eleven injections has been made. It is probably on account of its gradual but constant absorption, and slow elimination, that mercury introduced intra-muscularly is so much more potent in syphilis than when given by the mouth.

The rate of absorption has also been investigated at the Liverpool Skin Hospital by means of radiographs. It is found that, as a rule, four to six weeks elapse before all trace of an injection of 16 c.gms. of mercury disappears from the buttock.

The advantages of the intra-muscular treatment are :—

1. The mercury is well tolerated, and does not readily set up gastro-intestinal symptoms.

2. The treatment is carried out by the doctor, and is not left to the memory of the patient, who, as often as not, will forget to take pills or medicines regularly.

3. By seeing the patient regularly one is able to ascertain what resistance he is offering to the disease, and how far treatment is helping him. Oral medication, either in hospital or private practice, has this great disadvantage, that patients are likely to drift into irregularity of attendance, and so treatment becomes inconstant.

4. Improvement begins more quickly, often being apparent after one injection : progress is more rapid, and relapses are less frequent than with any other method.

The disadvantages alleged against the method are largely imaginary. In the long series of injections employed at the Liverpool Skin Hospital no case of abscess, cellulitis, or embolism has occurred : no large blood-vessels or nerve-trunks have been penetrated. No case of mercurial poisoning or severe salivation has occurred.

It has been stated by opponents of the method that patients take only one injection and never come again. Statistics were made recently of the attendance at hospital of syphilitic patients before and after intra-muscular injections were employed. It was found that

patients treated by injections attended much more regularly than those treated by oral medication.

Severe salivation is said to occur more frequently in patients treated intra-muscularly than by other methods. The severest cases of salivation I have seen were in patients treated with hydrargyrum cum cretâ. Some time ago I saw a young man who had been taking 6 grains of hydrargyrum cum cretâ daily till he was salivated, and yet without any amelioration of a copious papulopustular eruption which covered his whole body. An examination of his urine showed, though he was suffering from gingivitis, he was eliminating mercury in a fair quantity by his kidneys. In spite of the condition of his gums, he got intra-muscular injections, and his ptyalism disappeared, and his eruption rapidly cleared up under injections of grey oil.

Some fatal cases have been reported after injections of grey oil, but in most of these cases no details as to the doses administered were given, and in others there is no indication as to who administered the injections. These two points are of importance, for if no record of the dose is kept, and as in some hospitals untrained porters and dispensers are allowed to administer the injections, the wonder is that fatal cases do not occur more frequently.

In a fatal case recorded by Bouchaud, a woman, aged twenty-six years, had had twenty injections of grey oil extending over four months, the patient being pregnant at the time. All went well at the confinement, and a full-term child was delivered. A short time after, another injection of grey oil was given. A few days later acute stomatitis occurred. The dose of grey oil was unknown. Her teeth were in a very bad condition; they were never attended to in any way during her confinement. Several carious teeth were removed, with some improvement, but the stomatitis returned, and the patient died. At the necropsy nephritis of some standing was found.

In this case there was an unjustifiable use of grey oil viz., twenty injections in four months in a pregnant

woman. It is well known that mercurial stomatitis is very likely to occur in pregnancy and the puerperium when the woman is in a toxic condition already. The doses injected were not known—a fact which crops up frequently in the records of fatal cases.

REPORTS FROM CONTINENTAL CLINICS OF THE EFFICACY OF
GREY OIL.

Dubot, of Paris, who for some years has employed intra-muscular injections of grey oil, has published his results in a recent paper. During the three years 1906-7-8 he has dealt with 780 cases of syphilis in hospital and private practice (some 7,800 intra-muscular injections), and has never met with any serious complications. The doses varied from 7 to 14 centigrammes. In neither class of practice was there any case of stomatitis. In one case a small superficial abscess occurred. In three cases mercurial gripe, "gripe mercurielle," occurred—i.e., general malaise, slight febrile manifestations, pains about the limbs and joints, loss of appetite, &c.—symptoms resembling influenza. But these passed off in a few days.

Jullien has brought forward 200 cases which he has had under observation. He lays stress on starting intra-muscular injections of grey oil in large doses immediately the primary chancre is diagnosed. As to doubt about the diagnosis of primary chancre, he has overcome this by a systematic examination of the *Treponema pallidum* by demonstrating its presence in smears and frequently in the excised chancre, this being ascertained in a routine way before starting the treatment. As a result of starting injections so early he claims that tertiary manifestations will be prevented.

Neisser, of Breslau, has also employed large doses of grey oil, following on Dubot's initiative—this is, 14 centigrammes. He records 200 cases treated by this means, and states that no untoward complication was observed. Even in the case of women such large doses

could be frequently employed. He considers, as a rule, it is better to use smaller doses—viz., 5 to 7 centigrammes—in women.

Another recent paper by Carle confirms the results of Dubot, Jullien and others. He records over 300 cases with very satisfactory results.

CASES SHOWING THAT INTRA-MUSCULAR INJECTIONS WILL
SUCCEED WHEN ORAL MEDICATION HAS FAILED.

Mrs. C., aged forty, had tertiary ulcers on her left leg for seven years. She attended hospital, off and on, for nearly two years, and improved considerably, though a large, deep ulcer on the back of the left leg, just above the ankle, and two punched-out kidney-shaped ulcers on the dorsum of the foot, proved most intractable. She was treated orally with mercury, potassium iodide, and Donovan's solution, but it was not until mercurial injections were commenced that the obstinate ulcer began to heal. After the second injection of 16 c.gms. of grey oil, the ulcers looked cleaner and healthier, and after twelve injections they had completely disappeared.

J. B., age thirty-eight, dock labourer; date of primary infection unknown; had severe syphilitic glossitis for two years, attended with such pain that eating was almost impossible. He could not take hot drinks of any kind, nor smoke. He had been treated by oral medication for eighteen months before coming to hospital. A week after his first injection of 16 c.gms. of grey oil he was able to drink hot tea; after six full injections, spread over a period of eight weeks, the tongue was covered with healthy epithelium, and he was able to eat and drink with comfort.

It is frequently said that oral medication is good enough for mild cases of syphilis, and that intra-muscular injections should be reserved for severe cases. But the difficulty is to tell a mild case of syphilis. The most innocent-looking primary sore, or the scantiest secondary eruption may be followed by the most formidable specific affections of the central nervous system. Since it is always a serious disease, it should invariably be treated with vigour, and in the intra-muscular method there is an effective weapon for its control.

TREATMENT BY INTRA-MUSCULAR INJECTIONS OF CALOMEL.

Injections of calomel form one of the if not the—most effective methods of treating syphilis. Unfortunately, it possesses several marked disadvantages. One of these is that the injections are almost always followed by very severe pain. Another objection to its use is that on account of its high molecular weight it does not lend itself to the preparation of a satisfactory emulsion.

Calomel was first employed intra-muscularly in 1864. Jullien, who had experimented with a variety of mercurial preparations, came to the conclusion that in serious manifestations of syphilis calomel is a sheet anchor. He instances, for example, two cases of early optic neuritis which cleared up under its use. Other observers have shown its value in syphilitic affections of the nerves.

METHOD OF INJECTING CALOMEL.

Method of Injecting Calomel.—Ten centigrammes of calomel and 1 c.c. of liquid paraffin are placed in a special hollow glass cone. A number of these cones are prepared and sterilised. A glass syringe with a wide-bore needle is used. The syringe is sterilised by boiling, and then placed in 1 in 20 carbolic lotion. Before use it is washed through with alcohol. The skin of the part to be injected is sterilised with ether or alcohol. The nozzle of the syringe is inserted into the liquid; by working the piston up and down several times the calomel is intimately mixed with the paraffin and is easily injected through the needle. The quantity of calomel which is actually injected is considered to be about 7 c.gm. The injection is made deeply, the needle being inserted to its full extent vertically to the surface.

As a routine method of treatment, its disadvantages far outweigh its advantages, and place it much below grey oil.

In obstinate cases, or those in which the central nervous system is attacked, and it is imperative to bring the

disease under control at the earliest possible moment, it may be worth while to try injections of calomel in spite of its drawbacks.

ART. VII. *Duodenal Ulcer.*^a By MALCOLM KING
ACHESON, M.A., M.D. Univ. Dubl.

As I have been a victim to this malady for some years I have devoted much time to, and taken more than ordinary interest in, the study of the disease. I purpose giving a brief history of my own case, and then dealing generally with the entire subject.

About eight years ago I remember having a very acute pain in the epigastrium, which always occurred with unfailing regularity at the same hour in the morning, during the course of a lecture, which I attended before breakfast. This I attributed to indigestion. Whatever the cause may have been, quite suddenly, at the end of a week from the first onset, the pain left me. There was no return of the pain for some years.

A rather prolonged attack of jaundice was the next symptom of the progress of the duodenal catarrh. Then followed occasional vague digestive disturbances, which could generally be explained by some error in diet. Hunger, too, seemed to attack me severely: and, further, though this hunger was fully gratified, yet, instead of gaining flesh, I lost it.

In August, 1908, my first acquaintance with genuine hunger-pain began. This generally came on about 3.30 or 4 in the afternoon (and occasionally at night), and could be relieved only by taking afternoon tea or a large dose of sodium bicarbonate.

During the next few months I had complete immunity from pain for periods lasting for three weeks.

In November, a doctor, whom I knew but slightly, suddenly developed the symptoms of perforated duodenal

^a Being a Thesis read for the Degree of Doctor of Medicine in the University of Dublin, on Tuesday, February 8, 1910.

ucler. The ensuing laparotomy confirmed the diagnosis. On making some inquiries concerning the patient's condition before perforation, I felt convinced that even if I had not the same disease, at least I had the same symptoms.

In February, 1909, I went for a voyage as ship's surgeon, taking with me as my sole medical authority Osler's "Practice of Medicine" (1905). The pain recurred. According to Osler, as I had no melæna, I could not have duodenal ulcer; therefore, I argued that exercise would do me good. One day, after indulging in cock-fighting, I felt suddenly rather unwell. I treated myself to a dose of calomel, and on the day following a considerable amount of melæna appeared. This continued for a few days, and then gradually subsided. Duodenal ulcer seemed to me now to be the only adequate diagnosis. The treatment of absolute rest recommended by Osler did not appeal to me, as I did not want to be marooned at some hospital, staffed by foreigners. By a rather painful process I found out the articles of diet to avoid. Proteids alone were bad, but a mixed diet such as meat and potatoes was quite capable of causing a sleepless night. Giving up solids in any shape or form as hopeless, I tried liquids. Fortunately for me the chief steward had definite symptoms of a chronic gastric ulcer. Various ship's surgeons had painted him with iodine, blistered him, and had given various nauseous draughts to take without success. I pointed out to him the cause of his pains and hæmorrhage, and suggested that he should order large quantities of milk and fresh eggs at the first port of call. This he did.

The dietary which was most successful consisted of two eggs and half a pint of milk beaten up with a teaspoonful of golden syrup. This mixture was taken at three hourly intervals during the day for two days. Then a custard and corn-flour were added. Next, some typhoid toast, rice pudding and mealie-meal porridge came as a very welcome addition, and finally after about a month

we both returned to normal diet. As a rule, two days of ordinary food proved quite sufficient to cause the whole trouble to commence afresh in my case, but the steward, who had put on about eight pounds during the month, generally managed to continue a few days longer. I think pork, which was a weakness of his, as a rule caused the recurrence of the pain.

After a miserable period of almost four months I arrived in Dublin, where I did not waste much time in seeking advice and acting on it.

Gastro-jejunosomy was performed, a large, thin-walled ulcer, with a very thin floor, was found in the first part of the duodenum, there being no adhesions or gastrectasis. For four months after the operation, though I felt in every way much improved in health and strength, I did not regain my previous body-weight. During this time frequently the old pain often made me realise that the ulcer was still unhealed. Now, seven months after the operation, the pain appears only at rare intervals and in a very modified manner.

I shall now deal with the condition in a more generalised fashion.

Etiology.—Among 175,000 autopsies at St. Bartholomew's, forty-two males and fourteen females had an unhealed duodenal ulcer. It is not recorded in how many of these cases an examination of the duodenum was made, so the figures are practically useless.

From the statistics of perforation in duodenal ulcer the lesion is stated to be more common in the male than in the female. This may be true, but it is certain that the female is not so liable to sudden muscular strain, which is often the direct cause of perforation, and in addition, owing to their more sedentary occupation, the disease is more amenable to treatment or spontaneous cure. Another reason which may be worth considering is—a woman has the same feelings as a man, but having a more stoical nature, she offers a more stubborn resistance to pain: and believing that vague abdominal

discomfort is her legacy from Eve, she states that she has a headache, and retires to nurse her duodenal pangs in the privacy of her room.

Youth is no guarantee of immunity. In children under ten years of age it was found in 42 out of 297 *post-mortems*. Heredity plays a part. One striking instance has come to my knowledge. A girl of about twenty died of peritonitis following perforation, which was proved to be caused by a duodenal ulcer. Her brother also perforated and developed a subphrenic abscess, which subsequently burst through the diaphragm and drained naturally into the bronchi. Still another brother has typical symptoms of the disease. In another family the father has the usual signs in addition to an occasional alarming hæmorrhage from the bowel; the son has recently had a gastro-jejunostomy performed, and two sisters had hæmatemesis. From the Hospital Class one can generally elicit the fact that some near relative of the patient has had a bad stomach for years.

Trauma may cause ulceration, but it is easier to believe that a quiescent lesion has been awakened by the impact. Duodenal ulcers have been found in syphilis, tuberculosis, enteric fever, septicæmia, nephritis, valvular disease of the heart, pneumonia, and during the inflammatory period of severe burns.

One authority states that in 200 autopsies following burns duodenal ulcer occurred in 12.4 per cent. Another states that in 274 it was present twenty-one times.

However, recent researches are beginning to throw a new light on the subject. Allehin, in a limited number of general *post-mortems*, discovered that signs of ulceration existed in 5 per cent. of all cases. These facts rather reduce our interest in ulceration following burns.

Pathology.—The anterior wall of the first part of the duodenum is the commonest site for ulceration. In 23 cases it was present in the first part, in 16 in the second, and in 2 in the third part. Usually a round ulcer, it may have a variety of shapes according to its extent. If

acute and recent there is as a rule a thin floor without any peritoneal adhesions. In long-standing cases the duodenum may be firmly adherent to adjacent structures, such as the gall-bladder, liver, or pancreas. No definite micro-organism has been isolated from the surface of the ulcer.

The cause of duodenal ulcer is still enshrouded in mystery. Very few physiologists or clinicians have attempted to solve the problem. From Rose and Carless we learn that there are three stages in the formation of ulcer after burns—congestion, hæmorrhagic infiltration, and ulceration. Exploratory laparotomies have often been undertaken to attempt to control hæmorrhage, thought to be due to ulcer, but no definite ulcer was found—nothing but hæmorrhagic infiltration. Toluylendiamin, on being injected subcutaneously, produces ulceration of the duodenum. It was thought that it might be excreted in the bile, but ulceration occurred after ligature of the bile duct. It is now realised that the bile exerts a curative effect by neutralising the gastric juice, and to this is due the success of gastro-jejunostomy in ulcer of the pyloric end of the stomach and duodenum. After the operation bile regurgitates into the stomach through the new opening.

Sodium bicarbonate, according to Pawlow, causes a diminution in the secretion of gastric juice, and at the same time neutralises any excess.

Blair Bell found that after injecting a substance called gastrot toxin, ulcer of the stomach and duodenum occurred, but that the mucous membrane remained intact if he simultaneously administered large doses of sodium bicarbonate. It is evident, therefore, that the lesion is caused by the action of the gastric juice on a previously devitalised area of the mucous membrane.

Ulceration of different parts of the bowel has definitely been proved to be due to the action of tubercle, typhoid bacilli and the *Spirochæte pallida*. It is reasonable, then, to infer that in septicæmia and pneumonïa (in both

of which diseases the lesion has been found) the organism causing the general intoxication or fever plays the essential part in bringing about the necrosis of the mucous membrane. As toxins, such as gastrotoxin and toluylendiamin, have been definitely proved to exert a harmful influence on the secreting surface of the stomach or duodenum, it does not seem unreasonable to assume that a poison with a similar action is absorbed from a superficial burn.

In nephritis and valvular disease of the heart the action of the gastric juice on a mechanically-congested area is sufficient to cause ulceration.

Few sufferers from duodenal ulcer have any of these diseases, yet there must be some cause. Most of them have had carious teeth for years, and frequently symptoms of duodenal ulcer have disappeared on the condition of the mouth being attended to. If they have not carious teeth, they have chronic otitis media, nasal sinusitis, or some old inflammatory trouble of the genito-urinary tract.

Yet all people who have carious teeth do not develop duodenal or gastric ulcer; nor does every person exposed to scarlatina or diphtheria contract the disease; the cases are analogous. A dog fed on the septic products of carious teeth for a year showed no signs of disease at the end of the experiment; in fact he improved.

There is, then, no proof that these toxins cause the damage, but it is certain that there is a probability of it. Medicine has generally to deal with probabilities, rarely with certainties.

Symptoms. Until quite recently all abdominal pains which could not be explained by existing theories were termed neuroses. The daring advances of modern surgeons have solved many of these problems. For instance, some ten years ago the chapter devoted to the functional neuroses of the stomach was large and very formidable to the student. Within another few years that part of the book will have ceased to exist.

The case is interesting, which Osler mentions in his "System of Medicine" (1905), of the neurotic hospital physician who had frequent abdominal pains of the greatest severity, and once accompanied by jaundice. On opening his abdomen and on examining his gall-bladder no pathological condition was found. The surgeon of to-day would probably display a greater interest in the condition of his other intra-abdominal organs before diagnosing his condition as gastric neurosis. The typical signs of the disease are periodic attacks of hunger-pain; a sinking or gnawing sensation, or acidity about two or three hours after food, which is relieved temporarily by a meal or sodium bicarbonate; hæmorrhage from the bowel or melæna; constipation; pricking sensations in the region of the liver, and sore feeling in the epigastrium before breakfast; a sensation of blackness before the eyes on getting up suddenly and *muscae volitantes*; and loss of weight. On examination, the tongue may be furred, the conjunctivæ tinged with yellow, the lips a little pallid, the right rectus rather rigid, occult blood may be present in the stools, quantities of indican in the urine, and Cammidge's pancreatic reaction may be present.

As the disease or symptoms spontaneously disappear for months at a time, it is not difficult to understand that the first symptom may be an alarming or fatal hæmorrhage, or even perforation. What has happened during these periods of rest is probably that the surface of the ulcer and nerve endings have been grown over by granulations. This condition may progress to cicatrization and cure, or may remain inert.

Every patient who has acidity cannot be considered to have duodenal or gastric ulcer. Definite hunger-pain or hyperchlorhydria relieved by food is almost pathognomonic of the disease. Moynihan states that among 230 patients with these symptoms he found a duodenal ulcer in 212. In advanced stages there is no difficulty in arriving at a correct opinion, for there is as a rule marked

gastrectasis, and the pylorus may be palpable either as a result of pylorospasm or cicatricial contraction due to ulceration. As regards the stools, they may be whitish, indicating a temporary catarrh of the gut involving the bile duct; normal; greyish, which signifies catarrh in addition to the presence of a little altered blood; dark; tarry or hæmorrhagic. A few white blood cells may often be found when the tests for occult blood are negative.

The pain most commonly is felt in the epigastrium, but sometimes is referred to the umbilicus, sternum, throat, right renal region, or the right shoulder blade. The locality of the pain as a rule depends on the peritoneal adhesions and involvement of adjacent organs.

The main points to follow are the periodicity of the attacks, the character of the pain, the occasional presence of blood microscopically in the stools, especially after exertion, the great variety of colours which the stool may present, and finally the fact that a diet of milk and egg, with or without an alkali, will almost immediately banish the pain, provided that perforation is not imminent.

Complications and Sequela.—These are hæmorrhage and anæmia, perforation and hypophrenic abscess, stenosis of the pylorus and gastrectasis, chronic pancreatitis, involvement of other organs by the ulceration, and carcinoma. The statistics of these various complications are untrustworthy or they do not exist.

Perforation may, of course, cause general peritonitis or only a local abscess, according to the position of the ulcer. Perforation is extremely rare if account is taken of the number of people who must have the disease.

Stenosis of the duodenum and pylorus is the natural result of a prolonged period of ulceration, and gastrectasis must be another sequela.

Mayo Robson and Cammidge state that they have found evidences of previous ulceration of the duodenum or cholecystitis in all their cases of chronic pancreatitis.

Mayo states that among 180 patients suffering

from carcinoma of the stomach the growth has developed on the site of an ulcer in 87. The duodenum is often involved by a growth in the head of the pancreas.

Treatment.—There is no condition so amenable to treatment. If evidences of ulceration have been found in 5 per cent. of hospital patients, few of whom had ever paid any attention to the disease, it is evident that nature unaided is able to successfully deal with the large majority of cases. As a matter of fact it seems to be highly probable that the disease can exist with practically no symptoms, only vague discomfort.

The patient who consults a physician has definite feelings of uneasiness or pain. In his case the ulceration has, no doubt, involved the nerve plexuses between the mucous membrane and muscle, or it may even have extended to the serous coat. The diagnosis is rather obscure at this time, so many other causes for the sensation have to be eliminated.

Probably the best course to adopt at this stage is to order a course of milk and egg, and this is to be rigidly adhered to for a few days, and it also is wise to keep the patient under medical supervision. As for medicine, "mist. sodæ-cum-rheo" is a scientific treatment, and quite in accordance with Pawlow's physiological dicta. In a few days all pain will vanish, and the patient is perhaps never again troubled with similar symptoms.

In a case such as this one is inclined to think that the condition was only a mere attack of indigestion, and could not have been anything serious. Whereas, if it recurs again and again it is diagnosticated as duodenal ulcer. It is easy to understand the high mortality and serious prognosis of the older text-books. Duodenal ulcer was diagnosticated only when the ulceration had begun to threaten the patient's life.

The patient has another attack. On this occasion it is advisable to order absolute rest, and adopt one of the routine dietaries for gastric ulcer. Leube's methods are rather unpleasant if persisted in, as they tend to distress

the patient and are very liable to produce a septic condition in the mouth, which is, indeed, most undesirable.

Lenhartz's treatment is very successful, and is being generally adopted, thanks to Spriggs's recommendations.

A most excellent draught for relief of the pain, and which I can personally recommend, consists of dilute hydrocyanic acid, 2 minims; one-sixteenth of a grain of hydrochloride of cocain, one fluid drachm of solution of bismuth, with peppermint water to one ounce.

Hort, of Edinburgh, claims great success for a method which he has recently published. However, there is an absence of detail and a lack of statistics which must be deplored. His idea is that the ulcer is a symptom of an unknown disease, and is due to a diminished resisting power of the blood to some organism. This theory is not very new. His treatment consists in raw beef finely minced and raw beef juice. This is merely a modification of a pure proteid diet for hyperchlorhydria. In addition to this, however, he adds a dose of horse serum after food several times daily. He does not state how he guards against anaphylaxis, which must be a great source of unpleasantness in the treatment.

The main features in general treatment are rest and diet which will not mechanically irritate the surface of the ulcer, and which will also reduce to a minimum the secretion of gastric juice.

The indications for operation are frequent attacks of pain only temporarily controlled by medical treatment, persistent hæmorrhage, gastrectasis, and the occurrence of Cammidge's pancreatic reaction in the urine, which points to inflammatory changes in the pancreas. The technique of the operation does not appear to be of much interest to the physician, but as most cases, which are not dealt with in accordance with modern surgical principles, usually return to his care, it is perhaps as well to briefly mention the subject.

The operation now recognised as the best is posterior gastro-jejunostomy, the anastomosis being made between

the pyloric end of the stomach and the beginning of the jejunum.

Moynihan has recently advised the infolding of the ulcer to hasten the process of healing and stenosis. I have no doubt that if this had been done in my own case it would have saved me three or four months' discomfort.

The only result of operation which concerns the physician, in addition to failure, is the establishment of a jejunal ulcer. This appears in 2 per cent. to 3 per cent. of all cases. It seems to prove that the symptoms of the disease have been treated, but the disease itself is still present.

It is to be hoped that in the future it will be unnecessary to surrender so many of these cases to the surgeon, as it is unnatural to cut off the duodenum from receiving the local stimulus of the passage of food.

Diagnosis.—It is necessary to eliminate all possible sources of error before making a final diagnosis of duodenal ulcer. Perhaps the conditions for which it may most easily be mistaken are gall-stones, chronic appendicitis, gastric ulcer, mucous colitis, tubercular ulcers of the ileum or jejunum, and carcinoma of the pancreas, gall-bladder, duodenum, or stomach. Other diseases which sometimes cause a little difficulty at first sight are chronic intussusception, functional disturbance of the stomach during pregnancy, lateral curvature of the spine, floating kidney, stone in the kidney, and gastric crises. The question arises why so many conditions may resemble each other. Moynihan has supplied the answer. It appears that if there be a lesion of the intestine or neighbouring organs, a protective pylorospasm ensues. He states: "The function of the pylorus would, then, appear to be this: That, being controlled by stimuli aroused both on its proximal and distal sides, the distal stimulus, undoubtedly the more important, in altered conditions of the intestine, may be so insistent that relaxation is prevented and a firmer action is excited. The pylorus, that is to say, acts as a guard to the bowel distal

to it, and it is probably true to say that its protective control extends to the whole of the mid-gut."

It appears, then, that it is often an extremely difficult point to decide the locality of the lesion.

Gall-stones and Cholecystitis.—A colicky pain, due to the contractions of the gall-bladder, may occur about thirty minutes to an hour after food, a history of jaundice, colic, and the presence of a definite tumour in region of the gall-bladder may help, and so may the absence of hunger-pain and occult blood.

Chronic Appendicitis.—This condition mimics more closely gastric ulcer than duodenal, owing to the pylorospasm and consequent increased acidity. Melæna and hæmatemesis also occur in this disease. The only guide to take is a careful examination of the region of the appendix. History of acute attacks may give a clue. Hunger-pain is absent as a rule. Moderate exercise relieves in ulceration, but increases the discomfort in appendicial dyspepsia.

Gastric Ulcer.—The diagnosis between the two ulcerative conditions is really of no practical importance, and they may co-exist. The history of the time of onset of the pain, and the fact that vomiting is a little more frequent in gastric ulcer, together with a careful abdominal examination, give the most assistance in elucidating the problem.

Mucous Colitis.—This disease may seem to bear little resemblance to duodenal ulcer. Mucous colitis is due to constipation according to von Noorden, and in my opinion constipation is the result of duodenal ulcer. In the former disease a coarse diet will cure the constipation, and in the latter a slop diet. In both diseases the pain is felt at a definite interval after food, and in both shreds of mucous membrane may be passed. However, on other points the diagnosis is clear.

Carcinoma of the Pylorus, Pancreas, or Stomach.—The absence of hydrochloric acid and the presence of lactic acid in the stomach are the most essential facts to be

examined. This condition of affairs has of late been frequently found in chronic inflammatory conditions of the stomach with stasis, and such cases as these did excellently after the disease had been treated surgically. If there is a suspicion that cancer exists, it is wiser to advise an exploratory laparotomy at once, so that, if present, steps may be taken towards eradicating the growth.

Tubercular ulcer of the Jejunum or Ileum may be suspected when evidences of phthisis exist or of tuberculosis elsewhere. They may stimulate duodenal ulcer in every way. Even at an exploratory laparotomy they may escape the observation of the surgeon. Careful palpation may reveal their presence.

To eliminate the other diseases I have mentioned, a thorough scrutiny into every source of error is required before finally determining on any one factor as the cause of the symptoms.

If there is no sign of any of these diseases, and if there is no cause of chronic congestion, such as cirrhosis of the liver, valvular disease, nephritis or alcoholism, then one can feel justified in assuming that this is only a functional neurosis of the stomach or duodenum.

It is to be hoped that scientific research in the near future will unravel the mysteries surrounding this obscure disease and light will be thrown on the many problems which at present baffle the physician.

ART. VIII. *More about Medical Education.* By W. H. THOMPSON, M.D., &c.; King's Professor of Institutes of Medicine, School of Physic in Ireland, Trinity College, Dublin.

It may be accepted that all who take part in the education of the medical student do so with the single desire of turning out a competent medical practitioner.

Further, all would, I have no doubt, agree that the practitioner must know not only the fundamental rules of practice but the scientific reasons on which they are

based. If his knowledge be limited to the former he can never rationally vary a rule of practice should the slightest alteration in the conditions be presented. Working backwards, therefore, from the ideal goal, we deduce that to safely recognise and treat disease, requires a knowledge of pathology, bacteriology, and therapeutics. But these last-named subjects cannot be safely or advantageously acquired without a foundation of anatomy, histology, and physiology. Nor can physiology be taught without a basis of anatomy, physics, and chemistry. Reasoning in this way we arrive at a list of subjects commonly included in the *Curriculums* of the various medical schools of this country with the exception of the subjects of botany and zoology. The former of these two originally received its place because a knowledge of plants was necessary for the collection of the *Materia Medica*, the latter because of its importance in enabling the student of human anatomy to appreciate the position of man in relation to other members of the animal kingdom.

It may be contended that neither of these subjects is essential to the curriculum of Medicine nowadays. But if they are removed some of the knowledge now imparted by means of them will have to be transferred to others. Thus, the student on beginning physiology would lack a knowledge of what is meant by an animal or vegetable cell, and also the histological technique acquired in their study.

It is not the purpose of the present article to discuss the question of the inclusion or exclusion of these subjects. I wish to confine my observations to the part of the curriculum admitted to be essential by all. This resolves itself into two divisions—the one taught in the medical school, the other in the hospital. A great deal of the former must necessarily be acquired before the student can take advantage of the latter.

In a large number of medical schools—perhaps the majority—two years are assigned to the pre-hospital stage, during which the admittedly necessary subjects of

physics, chemistry, anatomy, and elementary physiology are taught. In Dublin the pre-hospital period is only one year, and students simultaneously begin attendance on hospitals and lectures in physiology. The result is, that for the first two or three months of this session, as stated in Dr. Bewley's article of last month, the physician, or possibly the surgeon, who has charge of the newly entered men, must supply more or less of the scientific groundwork necessary to make his teaching understood. This applies chiefly to physiology. If this lack of knowledge on the part of students be a serious drawback, it can be remedied in one of two ways, either by postponing the clinical instruction or by advancing the instruction in physiology to the first year of medical studies.

The point, however, is a minor one, and is only a small part of a more comprehensive complaint, to the effect that the medical school is claiming too much of the student's time, and leaving too little for the hospital. Anatomy and physiology are the subjects most blamed in this respect. For only one of these can I speak with first-hand knowledge—namely, physiology. But no evidence has been adduced to show that in either of the subjects the standard of theoretic knowledge now required is higher than that demanded twenty-five years ago during the four-year curriculum. Nor is it higher in Dublin than that now required by Edinburgh, Glasgow, Aberdeen, or Liverpool Universities, or by the Conjoint Board of England, with the examinations of all of which, save the first, I have personal knowledge.

The subject of physiology in one respect has altered. What is termed practical physiology has been introduced, to which some twenty-two to twenty-four meetings of two hours each are devoted. Possibly all clinical teachers do not realise what students learn in this class. In Trinity College—and probably the same applies to other schools—fully three-fourths of the work deals with instruction capable of direct application in the hospital ward. The detection of proteins of different

classes; the identification of sugar; the estimation of glucose; the examination of gastric juice for its essential constituents; the properties, detection, and estimation of hæmoglobin; the enumeration of blood corpuscles; the properties and means of recognition of the chief organic and inorganic constituents of urine; the quantitative estimation of urea, uric acid, total nitrogen, phosphates and chlorides; the taking of pulse-tracings and blood pressure; comprise the greater part of the work. Apparatus is supplied and maintained for these purposes, and each pair of students is provided beforehand with what is required for the day's work.

That students learn and know the above, so as to be able to apply it in hospital or elsewhere, there can be no doubt. Nor are they altogether allowed to forget it during their subsequent work in the medical school. A good deal of it is required in the course of practical pathology. Moreover, in the examination on applied physiology in Intermediate, Part II., of Dublin University, it is a routine of the *vivâ voce* to give a student a sample of blood or of gastric juice or of urine and ask for a report upon it in some definite respect, always with a view to its clinical bearing.

One would like to ask is this acquired knowledge sufficiently utilised in the hospital? There can hardly be two opinions concerning its importance or the value of taking advantage of it. The student would gain in practical knowledge of his cases by its wider application, and the teaching of the medical school would receive an impetus when it was found that what was learned to-day would next session or next year be part of the daily hospital work. The hospital would also gain by providing more extended facilities for carrying it on. No doubt, a laboratory of some sort is part of the equipment of every hospital, but the laboratory where, say, twenty students could carry out such routine observations side by side has, I think, yet to be provided. This, however, could be done by a capital expenditure of about £500.

with the service of a trained laboratory attendant at £1 per week, and a running cost of £50 a year to provide reagents, &c. The attendance of a special clinical assistant to supervise, guide, and interest the students in the work would also be required for a couple of hours every day.

Hospital teachers obviously realise that things are not as they used to be, but perhaps do not fully grasp how it has come about that the medical school is now so keen a rival for the time and interests of the student. Progress in medical knowledge in recent years has chiefly come from the laboratory side, and the teaching of the school has had to keep pace with this progress. We are all apt to forget that our teaching must serve a medical man for the greater part of his life, consequently it is imperative to keep it fully up to date. Much of what is taught to-day will within ten years be superseded by newer teaching and better methods, and in twenty years will become antiquated. In this respect it is even more incumbent upon the school than upon the hospital not to stand still, for "to stand still is to recede."

Laboratory work has thus come to be a factor in the education of a medical student which draws him more to the school now than formerly. Added to this, the system of classes in the medical school is more organised, and above all the attendance is compulsory. On the other hand, it is not compulsory in the hospital, and the class system is less developed.

The necessity for compulsory attendance at hospital can perhaps best be appreciated by contemplating the state of affairs that would ensue in a medical school if every student were free to attend or stay away as he pleased, with permission, when he did turn up, to go to any lecture that might be in progress, and to leave when he desired.

In self-protection more effort is demanded on the part of the hospital to ensure regular and continued attendance during the time set apart for clinical work. A

more systematic employment of every student's time is perhaps also desirable. To organise a working system will entail some trouble, and probably more than one attempt will have to be made before a satisfactory scheme is evolved. But the problem is not insoluble: it has been solved for other places. To realise that reform in this particular is necessary means a considerable step towards its accomplishment and towards a readjustment of the balance between the attractions of the hospital and the school. I confess, however, that I cannot altogether dispel a fear that not a few of the present generation of clinical teachers have little sympathy with laboratory work. They have not been brought up on it; and it does not appeal to them. Nevertheless, it is a factor to be taken into account and to be utilised if the best results are to be achieved.

It will be seen that I am not in disagreement with the underlying aim of the article on "Medical Education" by Dr. Bewley, to which I have referred, and which has elicited this contribution. The criticisms I have made apply to parts and features of the system which are not covered by it.

I am sorry I cannot agree with all the suggested remedies. If I might summarise them they are:—That the standard of teaching should be lowered to the level of the requirements of the average man; that all the teaching should have a direct bearing on the practice of medicine; that botany and zoology should be omitted from the medical curriculum; that both anatomy and physiology should be begun in the first year and finished off at the end of the second year; that the requirements in these subjects could be met by text-books—in anatomy of 300 to 350 pages, and in physiology of 250 to 300 pages; that a special course of instruction in clinical methods should be introduced; that a minimum of 33 per cent. of attendances should be enforced at hospital; and that, having made these changes, everything else might proceed much as before.

I have endeavoured to show that the teaching is of the nature suggested to a much greater degree than is recognised, and that the dissatisfaction with the present state of affairs has arisen more from disturbance of the old balance between the medical school and the hospital owing to the natural expansion of laboratory teaching, and the competition of an organised compulsory class system with a less differentiated voluntary one.

I should like, however, to state some objections that occur to me in regard to certain of the suggestions. First, with regard to the standard of teaching; there can be little doubt that at whatever level it is pitched only the top men of the class will reach that level. The great bulk will be content with approximations more or less remote. The object could be better achieved by regulating the examination paper so that the average man, who has honestly endeavoured to do his work, could always pass. Next, with regard to the amount of anatomy and physiology suggested as sufficient. It is difficult to think that this is seriously meant. If so, these subjects are to be reduced to less than half the minimum taught to average men during the four-year curriculum. It also means that physiology is to be reduced to a little over one-third of Starling's text-book, entitled "*The Essentials of Human Physiology*," and which represents the amount considered sufficient by the author for the medical curriculum. In passing, I may say that I should be very pleased if I thought that the majority of our students knew it even moderately well.

Before leaving the question of anatomy and physiology it may also be useful to point out that if they are to be completed within the first two years of medical studies, and an arts course carried on as well, not only will the curriculum have to be lightened by excluding botany and zoology, but also by postponing hospital work as well. A "block" will, in addition, have to be introduced at the end of the first year, and no student allowed to proceed further till he has completed the work of that year and

passed the examinations at the end of it. No anatomist and no physiologist can teach what is required within the time, to men whose thoughts are centred on the work of a previous year. Compulsory re-attendance on lectures and practical work will also have to be enforced in the case of men who have seriously failed.

There is, in addition, another general effect which would likewise follow. Under the rules of the General Medical Council no part of the final examinations can be taken before the end of the fifth year. If the preliminary subjects, with anatomy and physiology, are crowded into the first two years the result will be a much less even distribution of work than now exists. The demands on the student during the third and fourth years—by no means excessive now—would then be very light indeed, and who can doubt that the effort would correspond.

As regards the minimum of compulsory hospital attendance I am convinced the number suggested—one-third—is altogether too low, and would make matters worse, if possible, than they are now. Many men would conscientiously feel that they had done enough by attending the stated minimum who now aim at considerably more. There is no apparent or adequate reason why the three-fourths rule should be relaxed, except, perhaps, in the final year, when more latitude might be given or the roll omitted altogether.

The chief points I have contended for may be summarised as follow:—

1. That the teaching given in the laboratories of medical schools has a direct or clinical bearing to a greater degree than is generally recognised.

2. That the standard in anatomy and physiology is not higher now than it was during the four-year curriculum.

3. That the dissatisfaction on the part of the hospital with the present state of affairs has chiefly arisen from a normal development—namely, the natural growth of laboratory instruction in accordance with the recent progress of medicine.

4. That it would be unwise to check this growth, and that the hospital would benefit by providing greater facilities for utilising to a fuller extent the laboratory teaching given to the students.

5. That the hospital would gain by adopting a more developed class system and enforcing a more regular attendance.

6. That the changes in the medical curriculum commonly suggested by clinical teachers—namely, the exclusion of botany and zoology, together with the proposal to reduce anatomy and physiology, and confine them to the first two years—would entail a postponement of hospital work till the third year or even later in the case of students who fall behind.

7. That the compression of work into the early years of the curriculum, coupled with the relegation of the final examinations to the *end* of the fifth year, would leave the third and fourth years very light, and would not help the student.

In conclusion, I would like to say that I put forward these views very diffidently and in the hope that they will at least give no offence to anyone. They have been elicited by Dr. Bewley's article, and in all likelihood would not otherwise have appeared in print.

PRECAUTIONS AGAINST STRONG ANTISEPTICS.

EVERY practitioner after handling the cork or glass stopper of a tricresol bottle has observed very troublesome and painful crevices in the epidermis of his fingers, which heal only after several months' treatment. This should be avoided by always removing and replacing the stopper with a pair of pincers. If, nevertheless, some tricresol or formalin has come into contact with the fingers, they should be dressed before retiring with lanoline cream, or perhydrol, 50 parts, and glycerine, 100 parts. Dermatol salve also renders great service. C. Fahsel in *Archiv. für Zahnheilkunde*.—*British Dental Journal*, February 15, 1910.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1 *System of Medicine by Many Writers.* Edited by SIR CLIFFORD ALLBUTT, K.C.B., M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A.; Regius Professor of Physic in the University of Cambridge. Fellow of Gonville and Caius College; and HUMPHRY DAVY ROLLESTON, M.A., M.D., F.R.C.P.; Senior Physician, St. George's Hospital, Physician to the Victoria Hospital for Children, sometime Fellow of St. John's College, Cambridge. Volume VI. Diseases of the Heart and Blood-vessels. London, Macmillan & Co. 1909. 8vo. Pp. xiv + 861.

THE duty of the reviewer of a new volume of the "System of Medicine" is simply to indicate its scope and contents. As to the scope of the present volume—the sixth—we are pleased to find that it is confined to the diseases of the heart and blood-vessels—an all-important subject which justifies the setting apart of a volume for its exclusive consideration.

"Diseases of the Heart" are discussed under the headings—physics of the circulation, diseases of the pericardium and of the myocardium, Stokes-Adams' disease, angina pectoris, over-stress of the heart, injuries by electric currents, acute simple endocarditis, congenital diseases, right-sided valvular diseases, diseases of the mitral area and of the aortic area, and functional disorders.

"Diseases of the Blood-vessels and Lymphatics" are dealt with in sections on arterial degenerations and diseases, aneurysm, phlebitis, thrombosis, embolism, and diseases of the lymphatic vessels.

From the foregoing enumeration of the contents, and seeing that there are 861 pages of letterpress in the

volume, it will be easy to perceive that the work must rank as an authoritative treatise on diseases of the heart and circulation. And this all the more since the Editors have called to their aid such men as Professor Sherrington, Dr. James Mackenzie, Professor Osler, Sir R. Douglas Powell, Dr. George A. Gibson, Dr. Frederick T. Roberts, Dr. G. Newton Pitt, Dr. A. Keith, Dr. L. Humphry, Sir Thomas Oliver, Dr. F. W. Mott, Mr. H. H. Clutton, Dr. T. M'Crae, Dr. R. W. Michell, and Professor W. H. Welch. Is it by accident that no name of an Irish physician figures in this long list? Were we asked, we think we could supply the names of not a few Irish physicians who at the present day would rank as not unworthy successors of Cheyne, Adams, Stokes, and Corrigan.

Professor Sherrington's original introductory article on "Cardiac Physics" has been revised by Dr. James Mackenzie, who has added an account of the peripheral circulation, including arterial blood-pressure. Hence, the title of the article is now "Physics of the Circulation." Professor Osler and Dr. Keith contribute an entirely new article on "Stokes-Adams' Disease"—the pathological section of the article being the work of Dr. Keith. In a very full bibliography no reference is made to Dr. J. Magee Finny's admirable clinical record of a case of bradycardia, with arrhythmia and epileptiform seizures, which he submitted to the Medical Section of the Royal Academy of Medicine in Ireland in March, 1906, and which was published in the number of this Journal for May of that year. (Vol. CXXI., No. 413. Third Series. Page 321.)

Sir Clifford Allbutt has carefully re-written his account of "Overstress of the Heart," which has been further enriched by including a report by Dr. R. W. Michell, of Cambridge, on the influence of continued hard physical exercise on the heart of the young man. The material for this report was obtained from careful examinations of present or past undergraduates of the University of Cambridge, including 1,200 rowing men, 410 football players, and a few running men. The points which stand out

most prominently, as the men are followed through the years of their healthy, athletic lives, are: (1) The progressive reduction in the frequency of the pulse; (2) the progressive increase, in each succeeding year of residence, in the percentage of men who show this reduced pulse-rate; (3) the progressive decrease in the difference between the frequency of the morning pulse-rate, before exercise, and the evening, after exercise; (4) the gradual increase in the size of the left ventricle (page 200).

In 1898 the late Professor Julius Dreschfeld wrote an excellent description of acute simple endocarditis for the first edition of the "System of Medicine." This article has been revised and brought up to date by Dr. T. M'Crae. Similarly, the late Dr. A. E. Sansom's monograph on "Diseases of the Mitral Valve" has been revised—in fact, re-written—by Dr. George A. Gibson. It is a splendid piece of work, occupying 80 pages. In the account of the treatment, there is, at page 401, a timely warning against the dangers attending a protracted injudicious administration of digitalis and strophanthus.

A new article on "Aneurysm" has been contributed by Professor Osler. It is worthy of the subject and of the author.

The Dublin University Calendar for the Year 1909-1910.

Vol. II. Dublin: Hodges, Figgis & Co. 1910. 8vo.

Pp. iv + 365.

THIS volume of the "University Calendar" for the current year contains the usual lists of honours and prizes, of degrees conferred during the academic year, and of awards in the various professional schools.

The total numerical strength of Trinity College under the degree of M.A. in 1910 is given at page 131. The figures are these:—Women—Non-foundation Scholars, 11; Pensioners, 120; Sizars, 3. Men—Scholars of the House, 70; Pensioners, 883; Sizars and ex-Sizars, 34. Total, 1,121. This number does not include the names of students in the Medical School or Law School who have not paid the last half-yearly Arts' fee. Compared with

1909, there is a gain of 12. The Senatus Academicus numbers 434, compared with 431 in 1909. On the roll of Parliamentary Electors of the University of Dublin, 5,036 names appear, compared with 4,990 in 1909.

The printing of the volume is excellent, and, considering the number of names, is wonderfully accurate.

The Maniac. A Realistic Study of Madness from the Maniac's point of view. London: Rebman, Limited.
1909. Cr. 8vo. Pp. x + 304.

THIS tolerably well-written book purports to be an account of the authoress's personal experiences in passing through a short attack of acute insanity—whether “mania” or not, as alleged, it would be rash to decide on the evidence offered—and is claimed by the publishers to be “a most valuable psychological study,” especially to medical men, while to the General Public it is supposed to be “the most weirdly sensational of novels.” As regards the latter claim, it does not seem, even if substantiated, to justify pandering to the unhealthy curiosity which in old days drew crowds to stare at the patients in Bethlem as one of the sights of London, though there is nothing in the book to object to on the score of prurience, as certain reviewers seem to have thought. Its value as a psychological study seems to us also somewhat problematical. Really authentic accounts of mental experiences, by those who have gone through them, undoubtedly have their worth, but this description is rather too complete and too glibly written, vivid as it undoubtedly is, to carry full conviction; by which we do not for a moment mean to impugn the good faith of the authoress, but only the reliability of her memory of such a seething turmoil of mental experiences. While, however, the book scarcely deserves careful study, it is certainly worth a rapid perusal, as facts do stand out here and there which it will do no harm to have impressed on one, and even the comments of the authoress, though somewhat crude and amateurish, occasionally merit attention. One objects altogether to her assumption, however, that all cases of insanity have

experiences similar to hers. One fact in particular is certainly brought out—viz., the danger to improperly qualified persons, and those of unstable brains, of dabbling in spiritualism, “psychical research,” and such like subjects, since the nightmare of this six-weeks’ illness was tinged throughout (and probably greatly aggravated, if not partly caused) by the patient’s previous experiences in that line. Other points which cannot be too strongly insisted on are her complete innocence and unconsciousness of the objectionable utterances said to have fallen from her, which she obviously regards with horror; and the suffering caused her by the levity with which her complaints of her painful experiences were at times received. In the dedication “To my Doctor” we are informed that the book was written at his instigation. It is a pity that he did not see his way to supply a commentary on the case from the medical standpoint, which would greatly have enhanced its value as a “psychological study,” and might have deterred the publishers from offering it to the “General Public”—even with capital initials—as a novel.

A Practical Study of Malaria. By WILLIAM H. DEADERICK, M.D. Philadelphia and London: W. B. Saunders Company. 1909. Svo. Pp. 402.

WE have nothing but praise for this book, which we consider one of the best of its kind. The author of this volume of 400 pages believes there is a place for such a work “written by one engaged entirely in private practice largely in country districts in the home of the severer forms of the disease,” and we agree with him and congratulate him on the result of his labours.

Notwithstanding the author’s description of himself, his book is not by any means merely, or even chiefly, a clinical account of malaria as seen by the general practitioner. The subject is viewed from the standpoints of Geographic Distribution, Ætiology, Pathologic Anatomy, Clinical History, Diagnosis, Prognosis, Prophylaxis, and Treatment. The illustrations, which are numerous, are

excellent, and the printing, paper, and binding leave little to be desired. The references, numbering 449, are arranged in numerical order at the end of the book, and constitute a valuable bibliography.

"Hæmoglobinuric Fever"—"that mystic paramalarial syndrome"—receives very considerable attention. Some very useful notes are given on "The Surgical Aspect of Malaria," one of which is especially important—*i.e.*, "in subjects of latent malaria trauma is apt to excite the latter into activity." Surgeons who operate on patients who return from malarial countries should bear this in mind, as well as midwives who attend women who have returned for their confinement.

The chapter on Prophylaxis is very complete, and is well up to date, while the illustrations are happily chosen. All sanitarians will agree with the opinion expressed by the author, that "it should be the duty of someone to see that the construction of railroads, canals, and similar enterprises do not render a country more unsanitary."

It would be better, we think, to illustrate the mosquitos spread out in the usual way, showing the dorsal view only. The figures 20, 21, 28, 29, and 35 are the least useful in the book.

The third cycle of the malarial parasite—the parthogenetic cycle—is clearly described.

The Open-air or Sanatorium Treatment of Pulmonary Consumption. By F. RUFENACHT WALTERS, M.D., B.S. Lond.; Physician to the Crooksbury Sanatorium. London: Baillière, Tindall & Cox. 1909. 8vo. Pp. xvi + 323. 29 Illustrations.

THE number of books that have appeared in recent years dealing with the various aspects of the tuberculosis problem afford, perhaps, a healthy sign of the activity of the crusade against this disease, but they cause much weariness to the medical man whose duty compels him to read them. The form of expression varies with the writer, but there is little alteration in the information

afforded. The principles of the sanatorium treatment of the disease are now fairly well understood, even by the multitude, and there does not appear to be enough that is new to afford material for the making of another book. It is probable, however, that the multiplication of books tends to the spread of knowledge, and knowledge of tuberculosis cannot be too widely spread if the disease is to be dealt with satisfactorily. On this ground we can extend a welcome to Dr. Walters' book, for we believe it will help to spread this knowledge. The first part of the book is intended for the information of patients, while the second part is more especially for the benefit of physicians. This method of book-making is open to many objections, but under the circumstances is perhaps justified. It is of the utmost importance that the patient should know what he can of himself do towards the cure of his disease, but it is also important that he should recognise the necessity for the assistance of a skilled physician to guide and assist his endeavours. This necessity may, perhaps, be more impressed upon him when he sees the stress that is laid on the purely medical treatment of the disease. For the physician we fear the directions are in many cases too much curtailed to be of great value. If we take, for example, the chapter dealing with the "specific treatment," some twenty-one methods are mentioned, but the information afforded about any of them is hardly sufficient for one who is ignorant of their use, and there is little to indicate which our author would himself recommend, or on what grounds the selection should be made.

We ourselves are firm believers in the value of both the specific diagnosis and treatment of tuberculosis, and consider that a more general adoption of these measures would do more to stamp out consumption than the multiplication of many sanatoriums. As our author tells us, "the modern treatment of consumption, as carried out in the best sanatoria, is based on an enlightened common sense." If this "common sense" is exhibited in the home and specific treatment adopted in the very early cases the need for sanatoriums will soon disappear. To workers such as Dr. Walters, however, we owe much, not

only for teaching the people this "common sense," but for showing by practical demonstration in their sanatoriums that it is common sense, and that the rules of life there adopted are full of benefit and promise of health.

Health, Morals, and Longevity. By GEORGE GRESSWELL, M.A. Oxon., L.R.C.P. & S. Edin.; and ALBERT GRESSWELL, M.A., M.D. Oxon. Bristol: John Wright & Sons, Ltd. 1909. 8vo. Pp. x + 229.

THE preservation of health and the attainment of long life have been objects of the first importance to philosophers of all ages. Both have been looked on as ends desirable in themselves, and also as desirable because they are essential to happiness. Many physicians have elaborated schemes for the attainment of these desirable ends, but so far the changes and chances of this mortal life have as a rule set these schemes at naught. Man desires health, for without it the full enjoyment of life is impossible, no matter what other goods the gods have bestowed upon us; he desires long life to enjoy the happiness of health and because he fears death. The fear of death, though by no means universal, is very general among human beings, and the explanation of the existence of this fear is by no means easy. The suggestion made by Metchnikoff appears as satisfactory as any; he would appear to have us believe that the reason so few desire death is because so few have reached the natural limit of life. To those who reach this natural limit the desire for death comes as the desire for sleep comes to a healthy man wearied with exercise.

Under the present conditions of civilisation the attainment of this natural limit of life, though possible, is very improbable, in spite of any precautions which may be taken for one, or which one may adopt for oneself. It is, however, conceivable that in the future, when Preventive Medicine has further developed, and has been granted the power which its importance merits, that it may be possible for the individual, by following out the rules of hygiene and temperance, to ensure for himself health

and length of days. How far we are at present from this state of things is evident from the fact that out of every one thousand children born seventy die before they reach the age of four years, and die, too, from causes that are mainly preventable.

In the book before us the authors have emphasised this, and have shown us that the expectation of life, though greater than it was some years ago, is still much less than it ought to be. Besides this the book contains much curious information and many valuable suggestions for the preservation of health. The difficulty for the individual, however, is that too often, though he knows and approves the right, yet he follows the wrong.

Clinical Obstetrics. By ROBERT JARDINE, M.D., M.R.C.S. Eng., F.R.S. Edin.; Professor of Midwifery in St. Mungo's College, Glasgow; Physician to the Glasgow Maternity and Women's Hospital; Examiner in Midwifery to the Scottish Conjoint Board, &c., &c. Pp. xxvii + 717. With 108 Illustrations and 8 Coloured Plates. London: Henry Kimpton. 1909.

WE fear that we are among the reviewers, to whom Dr. Jardine refers in his preface, who object to records of cases in text-books. Moreover, we are not altogether inclined to agree with his reasoning that such a course is necessary because "the book is one on clinical obstetrics, and it is impossible to teach clinically without cases." One can hardly "teach clinically" in a text-book even with their help, since clinical teaching is given at the bedside of the patient; but, putting this aside, and assuming, as we suppose Dr. Jardine means, that "clinical" is equivalent to "practical," it seems both possible and preferable to avoid the inclusion of cases. On the other hand, Dr. Jardine has received letters from "unknown readers," who testify their approval of his method, and so is apparently quite justified in adopting it.

Dr. Jardine's book has grown very considerably since we had the pleasure of reviewing its first edition, and we

confess to a greater regard for it in its original state. At present it is rather an anomalous work. It is not a large and full text-book on midwifery; indeed, if the illustrative cases were omitted it would strike one as being comparatively short, and, at the same time, owing to the paper used, it cannot be regarded as a handbook. We cannot see the object of using so heavy a paper and such wide margins, since the illustrations are not the strong point of the book.

The principal changes made in this edition are to be found in the sections on neuritis, pyelitis, acute yellow atrophy, eclampsia, pubiotomy, scopolamin-morphin anæsthesia, and suppression of urine. In discussing scopolamin-morphin anæsthesia we note that Dr. Jardine does not mention the necessity for keeping the patient under careful observation during the entire period of anæsthesia. All observers who have used this form of anæsthesia insist on this precaution, and we think Dr. Jardine would do well to draw attention to it.

Dr. Jardine does not regard pubiotomy as favourably as he does symphysiotomy, but he seems to have been unfortunate in his experience of it, whereas his cases of symphysiotomy were most successful.

We admire the book before us immensely in many ways, so much so that we never take it up without a desire that it was re-written, reduced by a half, and illustrated properly. It would then be one of the best manuals of the day, and it would still give its readers the benefit of Dr. Jardine's great experience.

Constipation and Allied Intestinal Disorders. By ARTHUR F. HERTZ, M.D., M.R.C.P.; Assistant Physician, Guy's Hospital. London: Henry Frowde; Hodder & Stoughton. 1909. Demy 8vo. Pp. xv + 344.

THIS volume, one of the latest additions to the Oxford Medical Publications, is the record of a serious study on the part of the author of the causes, varieties, symptoms, and treatment of constipation. It is based on the results of three years' study of the subject at Guy's Hospital,

during which numerous cases, both normal and pathological, were examined by the bismuth method. The first section of the book deals with the physiology of the intestinal movements and of defæcation, and contains numerous original observations. Amongst the more important of them are those which deal with the average time taken by the residue of a meal in passing through the different parts of the intestine. The average rate through the small intestine seems to be about five and a half feet per hour, so that the cæcum is reached in from four to five hours after a meal is taken—a fact which can be demonstrated either by X-rays following a bismuth meal or by listening over the cæcum with a stethoscope. During the first four hours after the first meal of the day no sounds will be heard in this region, but soon afterwards rhythmical squirting sounds become audible, due to the passage of the contents of the ileum through the ileo-cæcal valve. Our own experience is that the sounds can often be heard as early as three hours after breakfast, but no doubt much variation exists. The rate of progress through the large intestine is much slower, and, according to the writer, is unaided, as far as he can ascertain in the human subject, by anti-peristaltic waves. From the cæcum to the hepatic flexure requires two and a half hours, from the hepatic to the splenic flexure three hours, and from the splenic flexure to the pelvic colon two hours. The passage through the pelvic colon is still slower, doubtless owing to the fact that it is the normal resting-place of the fæces prior to evacuation. Amongst the most vigorous stimuli to peristalsis the author places first the taking of food—a fact of much importance to remember when dealing with cases either of constipation or of diarrhœa.

The second part of the book discusses the causes and varieties of constipation. Two main varieties are recognised—namely, (1) Cases in which there is delay in the passage of the fæces as far as the pelvic colon, and (2) cases in which, while the pelvic colon is reached in the normal time, delay subsequently occurs in evacuation. The first class may be caused either by deficient motor

power in the intestines, or by an excessive force being required to propel a mass, unusual either in quantity or consistence. The second class, to which the author applies the term *dyschezia*, may be caused either by inefficient defæcation or by an obstacle to efficient defæcation. Numerous examples of both classes of cases are quoted, but it is sufficient to mention here that the writer has shown that delay far more often takes place between the transverse colon and splenic flexure than elsewhere. Delay in the small intestines is met with, but not frequently, while delay in the passage from the cæcum to the transverse colon is exceptional. The importance of this last-quoted fact cannot be over-estimated, having regard to the operative procedures which Arbuthnot Lane has advocated as a cure for constipation. The present writer's conclusions, however, must be confirmed before one can definitely accept his statements as correct. In dealing with the normal position of the transverse colon the writer states that it may reach in the normal individual, standing upright, a level of four and a half inches below the umbilicus. No doubt it may do so, but we believe this to be very rare, while the figure on page 134, if properly drawn to scale, is, we are convinced, the reproduction of an abnormality. The stomach normally comes into contact with the upper margin of the transverse colon, and in consequence, if the figure referred to is correct, a portion of the greater curvature of the stomach must be several inches below the umbilicus. He does not tell us what fills up the space between the presumed lower margin of the liver and the curve of this so-called normal colon. Is it dilated duodenum, displaced stomach, or do the small intestines bulge up under cover of the transverse colon? Possibly it may seem that we are paying too much attention to a single illustration, but the point is of too great importance to pass over.

Part III. deals with the symptoms of constipation. The writer points out at the beginning that there are now scarcely any diseases which have not at one time been supposed to result from constipation, an attitude which he deprecates. After reading his own views, however,

one feels inclined to admit his primary contention, though, in all fairness, we may add that he is no faddist, but discusses the subject in an eminently rational and scientific manner. He is inclined to accept the possibility of a true copræmia, but regards it as being yet unproven. In discussing intestinal toxæmia, he does not seem to have considered the possibility of the blood being actually invaded by bacteria, such as *B. coli communis*, and in dealing with chlorosis he does not, we think, assign to constipation a sufficiently important place as a cause of this disease.

Part IV., the section on treatment, is admirable, and contains all that can be said on the subject.

In conclusion, we strongly recommend this book. It is extremely interesting, is well and clearly written, and places our whole knowledge of constipation on a more scientific basis. Personally, we have read it with much pleasure and profit, and hope to re-read it.

A Code of Rules for the Prevention of Infectious and Contagious Diseases in Schools. Issued by the Medical Officers of Schools' Association. Sixth Edition. London: J. & A. Churchill. 1910. 8vo. Pp. 64.

We have always entertained a favourable opinion of the "Code of Rules," drawn up for the first time in 1885 by the Medical Officers of Schools' Association, and now issued in a revised form as a sixth edition.

But we must take exception to the retention of the very objectionable name of "German Measles" as descriptive of rubella, or epidemic rose-rash, a disease which neither is "manufactured in Germany," nor has any claim to be called "measles." The retention of so unscientific an appellation is all the more difficult to understand when we read, in a footnote at page 24, that "the use of this term (German Measles) might be discontinued with advantage so as to obviate its confusion with (true) measles."

We must also dissent from the view, carried on from the fourth edition, which was published in 1899, that

"epidemic roseola" is a entity distinct from "rubella." In the preface to the fourth edition, signed by the President of the Association at the time, Mr. Howard Marsh, mention is made of "the common infectious exanthem which frequently bears a close resemblance to *Rubella*, and for which the term *Epidemic Roseola* has been retained as a convenient synonym." Do the words "for which" refer to "the common infectious exanthem" or to "Rubella"? If to the former, the word "synonym" is wrong—the term to use should be "name." If to the latter, then the identity of "the common infectious exanthem" and rubella is conceded, as it is in the fourth edition of "The Nomenclature of Diseases" of the Royal College of Physicians of London, published in 1906. But in the preface to the fourth edition of the "Code of Rules" the following passage also occurs:—"The *three* maladies—Measles, German Measles, and Epidemic Roseola—are now, therefore, *distinguished by official* titles which quite obviate the previously existent confusion." The italics are of our adding.

One of the most valuable parts of the Code is Appendix C., on "Disinfection," which Mr. A. C. Houston, D.Sc., has revised. This Appendix is really Dr. Houston's work, for it originally appeared as an abstract of a paper read by him before the Association in 1902.

Nisbet's Medical Directory, 1910. London: James Nisbet & Co., Ltd. 8vo. Pp. 822.

WE have received the now familiar "Nisbet's Medical Directory for 1910." Its aim, as announced in the preface to the first issue in 1908, is to meet the need of a handy, accurate, and inexpensive list of medical men, conveniently and concisely arranged in alphabetical order. That it has fulfilled this need is undoubted. Personally, we have found it invaluable on many occasions, more especially when dealing with correspondence on public matters, necessitating the forwarding of letters to large numbers of medical men. It contains both a general directory and also a local one, in which the

names of the various practitioners are arranged in lists under the heading of the town or district where they practise. We strongly recommend the volume. The extreme care taken in placing the same names in alphabetical order determined by the initials of the individuals, renders the search for any given name an extremely rapid and easy task in every instance.

Aids to Microscopic Diagnosis (Bacterial and Parasitic Diseases). By CAPT. E. BLAKE-KNOX, M.D., D.P.H., R.A.M.C. London: Baillière, Tindall & Cox. 1909. Fcap. 8vo. Pp. vii + 156.

IN the above work we have yet another of the so-called "Aids" to knowledge. But for the preface, one would not attempt to treat the book seriously; but while the author modestly disclaims originality in the treatment of the subject, he tells us in the preface that the book is compiled from notes taken during a course of study under such distinguished teachers as Wright and Leishmann, Professors A. C. O'Sullivan and A. H. White, and the author is himself a Doctor of Medicine of the University of Dublin.

Now, notes taken during class hours form a treacherous source of information, and this book is a case in point. It is written for the most part in the style of the sixpenny telegram, and shares the disadvantages of that method of expression, in that the information it intends to convey is too often either inaccurate or unintelligible. When the author deviates from the telegraphic style his English is as quaint as his views on pathology are barbarous. He tells us, for instance, in speaking of malaria, that "the sporocytes pass free into the plasma, of which nothing is now left but its skin," and, further on, that "these spores breaking up causes the rigor." Even the tabulated sections swarm with inaccuracies. We find, of course, the inevitable "leucopænia," and the "streptococcus pyogenes aureus," and among other remarkable statements we read that the colour index in trichinosis "is of a peculiar type resembling chlorosis, and falls as low as 5," that the

tubercle bacillus causes not only phthisis and lupus but "tubercular disease," and that the "dose of cocci injected for a vaccine should be high—4,000,000," when probably 400 millions was intended. Finally, there is a complete confusion between serum and vaccine therapy, while the paragraphs on inflammation and suppurative processes—with the strange classification, "surgical" and "medical" inflammation—must be read to be fully appreciated.

On the whole, the publication of the notes, in view of their alleged parentage, must be looked upon as a regrettable incident.

A Practical Guide to the Administration of Anæsthetics.

By R. J. PROBYN-WILLIAMS, M.D.; Senior Anæsthetist to the London Hospital. Second Edition. London: Longmans, Green & Co. 1909. 8vo. Pp. 228.

For the past nine years we have been in the habit of looking to Dr. Probyn-Williams's little book as one of the best of the smaller text-books on the subject with which it deals, and we extend a hearty welcome to the second edition. The teaching is sound and the explanations are clearly given, chief prominence being assigned to those matters that are likely to cause most trouble to the young anæsthetist. The book, too, is sufficiently short to ensure for it a careful study. It would seem to us, however, that Dr. Probyn-Williams, in common with most English writers on anæsthetics, has scarcely realised the full effect of the adoption of the open method of the administration of ether. In our opinion this change in the method of administration has completely altered our whole conception of the indications for the use of this drug, and to a very large extent also our ideas of its effects. One must now eliminate from their conception of ether anæsthesia all that is known to be due to the limitation of oxygen, and what that is can be appreciated only by those who have had experience of the change. We confess that we ourselves, though in the habit for years of using the Clover's inhaler largely without the bag, were unpre-

pared for the great change in the condition of the patient when ether is administered by the open method. We may not be prepared to go so far as some and to say that to ether administered in this way there are no contraindications, but we fully believe that there are very few patients who cannot be anæsthetised more safely by this method than by any other general anæsthetic. Were the capabilities of this method more appreciated in England there would, we believe, be less need for legislative interference with the subject.

In the present edition of his book Dr. Probyn-Williams has added a chapter dealing with spinal anæsthesia which will be of use to the student wishing for a general knowledge of the subject, but we doubt if the instructions are full enough for him to acquire sufficient information to undertake this branch of practice. Indeed, we are doubtful if this branch of anæsthetics will ever become part of the duties of the ordinary anæsthetist.

Though we have offered these criticisms, and in some particulars may appear to differ materially from our author, yet we feel that his book will be of real use to the teacher, and we could wish that the knowledge that it contains was part of the equipment of every medical man.

T. P. C. K.

Infancy. National Health Manuals. Edited by T. N. KELYNACK. London; Robert Cully. 1910. Pp. 186.

A BOOK about infants appearing with Dr. Kelynack's name attached to it must always prove attractive, and we confess to a distinct feeling of disappointment when we found that this book was a compilation, to which Dr. Kelynack had only written the preface and introduction. However, the fact that he is the editor shows that all the statements in the various chapters must have had his consideration, and this certainly increases their value. As is usual with books of this type, the chief fault lies in the unavoidable over-lapping and the contradictions present. The former has been to a great extent avoided, but with regard to the latter, a mother seeking for information is

told on page 46 to feed her newly-born infant on a mixture of equal parts of milk and water, whereas on page 93 she is told to mix in the proportion of 1 to 2!

The chapters are all readable, but very variable in value—that on common disorders falling greatly below the average, while those on crèches, milk depôts, and schools for mothers are particularly lucid and practical.

Technical terms have been avoided as much as possible, still the book—particularly the later chapters of it—will be appreciated only by the educated public. Even among these, however, it should supply a distinct want, and its low price (one shilling) should render it accessible to all.

Serums, Vaccines, and Toxines in Treatment and Diagnosis. By CECIL BOSANQUET, M.A., M.D. Oxon., F.R.C.P. Lond., Assistant Physician to the Charing Cross Hospital; and JOHN W. H. EYRE, F.R.S.E., Bacteriologist to Guy's Hospital. Second Edition. London and New York; Cassell & Co., Ltd. 1909. Cr. 8vo. Pp. iii + 262.

THE first edition of this valuable little work appeared in 1904. Since then an enormous amount of work has been done in connection with the subjects with which it deals, and in consequence a thorough revision of the whole book has been made. As far as we can judge, after a careful perusal of the entire volume, no advance of the least importance has been overlooked by the authors, and in consequence we can recommend the book most highly as a standard reference and text-book of convenient size. The first three chapters deal with the general subjects of Immunity, the Preparation and Administration of Serums and Vaccines, and the Use of Serums and Toxines in Diagnosis. In the discussion of these subjects admirable lucidity of expression is shown, and without the omission of any essential details, the most complicated facts are presented by the writers in a manner that would make them plain even to those who were completely ignorant of the matters discussed.

The subsequent chapters deal successively with all the known, and we might almost add unknown, serums and

vaccines that have been used or described. Their value in diagnosis, prophylaxis, and as direct therapeutic agents, including methods of administration and dosage, are fully entered into. The chapters on Diphtheria, Tetanus, Enteric Fever, Tuberculosis, Streptococcal and Staphylococcal infections will probably prove most interesting to the ordinary reader. An appendix on the Therapeutic Use of Normal Serum is added, and also one containing a list of the serums and vaccines which are now on the market and of the various firms from which each individual preparation can be obtained. This list should prove most useful, as it constitutes a sort of summary of the lists issued by makers, and which are often not at hand when a given serum or vaccine is desired.

Transactions of the Thirty-first Annual Meeting of the American Laryngological Association, held at Boston, Mass., May 31st, June 1st and 2nd, 1909. New York: The McConnell Printing Co. 1909. 8vo. Pp. 406.

AMONGST the papers read at the Annual Meeting of the above Association there are several of considerable merit, and some which contain information of much value.

Dr. G. Hudson Makuen discusses the action of the respiratory muscles in the production of voice, and the following are some of his remarks:—He states that the kinesthetic sensations of muscle are largely acquired, and they may be developed to a high degree. He compares it to the principle made use of in teaching the blind and deaf, mentioning the famous case of Helen Keller, who depended entirely upon the development of the kinesthetic areas of her brain for guidance in her vocalisation and articulation. It is well understood that the action of the muscles in normal breathing and vocalisation are quite different. In the first case expiration is passive; in the latter, active. He winds up with the following conclusions:—

1. The action of the respiratory muscles in voice production differs in some important respects from their action in passive breathing.

2. While the function of the diaphragm is inspiratory in passive breathing, it must be expiratory in active or artistic breathing.

3. Although the diaphragm is generally classed among the involuntary muscles, its action, like that of so many other so-called involuntary muscles, may be brought entirely within the domain of the will.

4. The proper use of the respiratory muscles for singing and speaking may be acquired by practice, and should be taught by the teachers of voice culture.

Dr. William K. Simpson gives some clinical experiences with calcium lactate in hæmorrhages of the upper air tract. He has used it with success in many different forms of hæmorrhage, and also as a means of controlling "operative" hæmorrhage by administering it three days before an operation, and continuing the drug two or three days afterwards. He has been satisfied that it has not only prevented primary hæmorrhage, but has been particularly successful in the prevention of secondary hæmorrhages. However, it should be here noted that most operating surgeons are not accustomed to expect secondary hæmorrhages, and, indeed, we have the good fortune to very rarely meet with them. His advice as to the dosage is—to begin with an initial dose of sixty grains, especially in the adult, children in proportion, and then thirty grains twice during the first twenty-four hours. In the non-operative and hæmophilic cases, the drachm doses may be continued every morning, and then every other day until such time as there is improvement in either the bleeding or in the hastening of the coagulation, as determined by laboratory tests—the improvement to be maintained by occasional drachm doses.

Dr. Greenfield Sluder gives us an interesting account of the relation of Meckel's ganglion to the walls of the accessory sinuses of the nose, and brings out very clearly how close it is to the nasal mucous membrane: in fact, a distance of only four to five millimetres separates the two structures.

There is also in the volume a very interesting series of papers on the relation of nasal trouble to aural disease—

a subject which was discussed in conjunction with the American Otological Society, but the papers are too long and too complicated to review here, and small bits culled from them would not give a fair idea of their contents. But the whole discussion would well repay perusal.

Open-Air at Home. By STANLEY H. BATES. With Introduction by SIR JAMES CRICHTON-BROWNE, M.D., F.R.S. Bristol: John Wright & Sons, Ltd. 1910. Sm. 8vo. Pp. 62.

THIS is an excellent little book to place in the hands of a patient who finds it necessary to carry out an open-air treatment at home. It is written by a layman, who found himself in that position, after a preliminary sanatorium treatment. From personal experience we believe that it will be a most useful guide, as many patients get bewildered in discussing the merits of the various chalets and in making a final selection from the numerous designs that are put before them. The present book gives the writer's personal experience; it describes in detail the open-air shelter which he devised, including an account of numerous little devices which he was gradually led to adopt in order to overcome the smaller inconveniences incidental to an open-air life. The spirit of thoroughness and determination which can be read throughout the record, and which the writer endeavours to communicate to others, should of itself prove a stimulus to half-hearted seekers after health.

Some Common Remedies and their Use in Practice. By EUSTACE SMITH, M.D.; Senior Physician to the East London Hospital for Children. London: H. K. Lewis. 1910. Cr. 8vo. Pp. vii + 112.

THIS little book is a reprint of seven papers contributed by the author to the *British Medical Journal* during the years 1908 and 1909. We read them all carefully on their first appearance, and thought so highly of them that we cut them out and preserved them for reference.

We, therefore, now feel much indebted to the author for republishing them in such a handy form. Each lecture is full of the wisdom of experience, and, like all of Eustace Smith's writings, is both interesting and instructive. The lectures deal with the use of antimony, of oil of turpentine, of alkalies, of anti-spasmodics, of opium, of sodium salicylate, and with the use and misuse of iron remedies. The only fault we have to find with the book is that it is too short, and we venture to hope that it will be supplemented at an early date by future lectures on kindred subjects. Of the actual substance of each lecture we need not speak. We advise every medical man to obtain the book for himself, and assure him that he will find enjoyment and information in its pages.

Hoblyn's Dictionary of Terms used in Medicine and the Collateral Sciences. Fourteenth Edition. Revised throughout, with numerous Additions. By JOHN A. P. PRICE, B.A., M.D. Oxon.; Surgeon to the Royal Berks Hospital; late Physician to the Royal Hospital for Children and Women. London: George Bell & Sons. 1909. Cr. 8vo. Pp. xii + 868.

"To the Memory of the Author, the late Richard D. Hoblyn, M.A., this Edition is respectfully dedicated by the Editor."

The present volume is worthy of the author, and the fourteenth edition has been brought up to date most ably by Dr. Price, in whom we recognise an Oxford scholar of no mean parts. It is claimed by the Editor that the addition of several new words and phrases, more particularly in relation to bacteriology, will render the work even more useful than it has been in the past. This is, no doubt, true, and yet we notice some omissions—for example, "interstitial pneumonia" is not mentioned, neither is "Rötheln"; "croupous" and "diphtheritic" inflammations are not defined, although these terms possess a definite pathological meaning. About some entries, as, for instance, "pneumonia," there hangs an obsolete air—a survival of older editions. "Leuco-

maines" and "ptomaines" are so written, although both these words are more properly written and pronounced "leucomaîns" and "ptomaiîns." But these are comparatively trivial points, and the "Dictionary" has secured too firm a hold on professional estimation to be injured by attention being drawn to such defects by a friendly and an appreciating reviewer.

Diseases of the Heart. By JAMES MACKENZIE, M.D., M.R.C.P. Second Edition. Oxford Medical Publications. London: Henry Frowde and Hodder & Stoughton. 1910. 8vo. Pp. xx + 419.

THE first edition of this original work upon the heart was very favourably reviewed in the number of this Journal for February, 1909 (Vol. CXXVII., No. 446, Third Series, page 129). It is gratifying to observe that our opinion as to the intrinsic value of the book has been endorsed by the profession, for a second edition has been called for within eighteen months of its first publication.

In his preface Dr. Mackenzie points out that the numerous figures in the text represent the actual facts as recorded by the movements of the heart and blood-vessels, and are, therefore, far more trustworthy than a verbal description. With characteristic modesty, the author admits that his interpretation of these tracings, which represents the present state of *his* knowledge, may ultimately be proved to be incorrect, but the recorded movements will still serve for other and more fitting explanations.

Many of the tracings serve to illustrate topics dealt with in a series of appendices—namely, the pulse in angina pectoris, the nodal rhythm, paroxysmal tachycardia of auricular origin, nodal bradycardia, irregularities in cardio-sclerosis, the effects of digitalis on the human heart, and a special research on the electrocardiogram, by Dr. Thomas Lewis, M.D., M.R.C.P., the expense of which was defrayed by the British Medical Association.

In 1887, Dr. Augustus Waller made a communication to

the *Journal of Physiology* (Vol. VIII., pp. 229-234), entitled "A Demonstration on Man of Electromotive Changes accompanying the Heart's Beat." That was the first occasion upon which the electric changes produced by the heart-beat were registered and studied in man. The galvanometer employed by Dr. Lewis is that invented by Prof. Einthoven and described by him in 1906 in the *Archive internationale der Physiologie* for that year (Vol. IV., pages 132-164). It consists of a heavy magnet, permanent or in circuit, the poles of which are close together. Between the poles a fine platinum or silvered quartz thread is suspended. When the instrument, called a string galvanometer, is working, the thread lies in a powerful magnetic field, and deviates whenever a current is led through it. The shadow of the string and its movements are magnified and projected, by means of a system of lenses and an arc light, on to a photographic apparatus. The body-current which it is desired to register is led from the limbs (right arm and left leg, or right arm and left arm) by immersing them in electrolytic solutions which are in connection with the ends of the suspended thread. Leads from two divisions of the body, mapped out by a plane crossing the base of the heart—one such division abutting upon the base, the other including the apex, of the cardiac ventricle—are equivalent to leads from base and apex of the ventricle. In the human subject, the dividing line referred to passes, according to Waller, from the left shoulder to the right groin. The right arm may, therefore, be used as a basal lead, while the left arm, or either leg, serves as an apical lead. And so, leading off from the human body, through the unbroken skin, records of the electric change as a result of systole of the cardiac ventricle may in this way be obtained.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR CHARLES BALL, F.R.C.S.I.
General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF PATHOLOGY.

President—ARTHUR H. BENSON, M.B., F.R.C.S.I.
Sectional Secretary—W. BOXWELL, M.B., F.R.C.P.I.

Friday, December 10, 1909.

THE PRESIDENT in the Chair.

A Case of Orbital Tumour.

THE PRESIDENT exhibited two tumours removed from the orbit and parotid region of a boy aged nine. When he saw the boy the eye was pushed forward and downward. A tumour was felt so firmly adherent to the brow that it was impossible to get any motion between it and the bone. The edge of the bone could not be made out as distinct from the tumour, and several who saw it were of opinion that it was a bony tumour. He got the case X-rayed, and it was declared not to be a bony tumour. He showed the case at the Ophthalmological Club, and his colleagues were about equally divided as to whether it was a cyst, a sarcoma, or a bony tumour. On cutting down on it he found it to be a very dense and almost bloodless tumour, extremely adherent to the bone, and lapping round the edge of the orbit coming from inside. It was excised with considerable difficulty. One did not know if it would recur, but from the comparative completeness with which it was shelled out there was, he thought,

every hope of its not recurring. The second tumour was from the parotid region of the same side ; it was definitely localised, but was adherent to the gland substance.

MR. H. C. MOONEY said the slides under the microscope showed the tumours to be sarcomata of a large round cell type. Sections of the gland presented similar appearances to the section of the tumour, except that there were some gland elements intermixed and more of the fibrous tissue.

Thyroid Tumour growing in the Tongue.

MR. GUNN gave a brief description of the development of the thyroid gland, and in particular of the middle lobe or isthmus, showing how, according to the theory propounded by His, it was not a difficult matter to understand the growth of tumours composed of thyroid tissue at or below the foramen cæcum. In Mr. Gunn's case such a tumour had occurred in a girl of eighteen. On removal it proved to be carcinomatous thyroid tissue. As far as he could find, no similar case had been recorded. A further point of interest in the case was the absence of the thyroid gland from its normal situation. This was demonstrated during the course of a tracheotomy performed as a preliminary to the removal of the tumour.

DR. W. G. HARVEY and PROFESSOR SCOTT agreed that it was undoubtedly carcinomatous tissue.

THE SECRETARY (Dr. Boxwell) expressed the thanks of the Section to Mr. Gunn for the exquisitely made model shown, which demonstrated the subject to perfection.

MR. GUNN, in reply to a question by Dr. Stokes, said he had had no personal experience of secondary deposits of non-malignant character associated with carcinoma of the thyroid. One patient, however, had died with a very small growth in the tongue and very malignant deposits in the lungs.

Three Rare Pathological Conditions in the Bone.

DR. HARVEY, in introducing this subject, said :—The skiagrams of three cases which were recently sent to me for radiographic examination present points of such especial interest that I thought it worth while to show them here.

CASE I.: A case of *Multiple Osteomata*.—A boy, aged six, a patient of Mr. T. E. Gordon, and the subject of multiple osteomata. The condition is itself not uncommon, but the multi-

plicity of the tumours and the degree of deformity in this case are unusual. Tumours are situated on the upper dorsal vertebræ, both scapulæ (numerous), the upper ends of both humeri, the lower ends of the radius and ulna; on the metacarpals and phalanges on both sides; also on the lower ends of both femora and at both extremities of the tibiæ and fibulæ. Osteomata, or bony tumours, are described as of three kinds—(1) ossifying chondromata; (2) ossifications of tendons and muscle insertions, and (3) calcifications of inflammatory exudates. *Myositis ossificans* must be classed separately. In this case the position of the tumours, occurring in the long bones almost invariably near the epiphyseal end of the diaphysis, leaves little doubt but that their origin was from cartilage cells possessed of aberrant growth situated in the diaphysis close to the line of growth of the bone. Especially are the radiographic appearances of the upper end of the tibia and fibula suggestive of enchondromatous origin. The spur on the lower end of the right femur is, however, evidently developed in the adductor sheath. I cannot regard this as a fortuitous combination. I have often found such in other radiograms, and I suggest that both forms of osteomata originate in the same way—that there is no essential difference in the pathogeny of bony spurs occurring in muscle insertions and true ossifying chondromata. There is in many places irregularity of the epiphyseal lines and of the bone growth, but I cannot agree to the suggestion that such cases are in any way connected with true rickets.

CASE II. : A case of *Coxa Valga*.—A child, aged four and a half, a patient of Mr. Seton Pringle. Some twelve months ago this girl was healthy, and could walk well. Then she fell into the fire and was severely burnt about the right hip. After prolonged treatment the burn healed, and the patient was found to have both hips ankylosed in a position of partial flexion and abduction. The skiagram shows practically no angle between the shaft and the neck of the femur, the former pointing directly to the acetabulum. The condition appears to merit the name of *coxa valga*. Presumably toxic absorption from the burn induced an arthritis, causing ankylosis. My view is that the widening of the angle is not a congenital condition. At the time of the burn the angle was the normally wide angle of a very small child. Subsequent treatment removed the weight of the body which, naturally pressing the femora upwards, makes the angle

gradually take the adult shape, while the weight of the legs in this case when the child was seated has, I think, in dragging on the ankylosed hips, gradually drawn neck and shaft into line.

CASE III. : A case of *Congenital Dislocation of the Shoulders*.—The patient, a boy of about eighteen, had never noticed anything wrong with his shoulders until a drill serjeant observed that he could not raise his arms properly above his head. The radiogram shows no proper acetabular cavity. The condition is identical on both sides. The axillary border of the scapula has an almost vertical position, and extending upwards from the region of the neck there is an ill-defined articular surface. The case appears in many respects to closely resemble one described by R. W. Smith in his *Treatise on Fractures and Dislocations* (1847), p. 268, which he describes as follows :—“ I found that there was no trace of glenoid cavity in the natural situation ; but upon the external surface of the neck of the scapula there was a well formed socket, which received the head of the humerus. It was an inch and three-quarters in length and an inch in breadth ; it was a little broader above than below, and its summit was less than a quarter of an inch from the undersurface of the acromion process. . . . The axillary margin of the scapula, if prolonged upwards, would have passed almost altogether internal to this abnormal socket.”

In this and the preceding case radiograms were taken in different angular positions to ensure against fallacies of projection.

DR. MOORHEAD inquired if the condition of the neck of the femur was not really a retention of the position that was normal in children. He ventured to doubt the diagnosis that there was a sub-acromial dislocation. One could see, he thought, that the humerus was lying directly anterior to the acromion process.

MR. WHEELER said he considered the hip case to be one of congenital deformity. The absorption of toxins might account for the ankylosis as in gonorrhœa.

DR. HAYES said he had read an article on coxa valga some time ago in which several cases, all adults, were described, and the measurements of the different angles were given. He thought the shoulder case showed considerable abnormality in the formation of the scapula.

DR. PEARSON was inclined to agree that the hip case was probably congenital ; the deformity was bilateral, but the degree of the deformity shown in the skiagram was greater than could

possibly be accounted for by a persistence of the obtuseness of the angle as suggested by Dr. Moorhead. If there was no fault of delivery it was probably a case of true congenital dislocation.

DR. HARVEY, in reply, said he was rather of opinion that it was not a congenital deformity, as no abnormality had been observed prior to the accident, which occurred a year ago, when the child was three years old. At that age the femoral angle would not be so pronounced as in a child of four, but would be considerably more so than the radiogram showed. The burn had become septic, and the child appeared to have been kept a great deal in a sitting position. He took it that toxæmia had produced ankylosis, and that, the weight of the body not being supported by the femora, the angle had ceased to evolve, and had further been straightened out by the pull on the legs in this constrained attitude.

Carcinoma of the Œsophagus.

DR. MOORHEAD exhibited a specimen of carcinoma of the œsophagus removed from a female patient who had come into hospital in August last complaining of difficulty in swallowing. He passed a bougie and found obstruction fifteen inches from the teeth. It was noticeable that the second sound in deglutition was absent or delayed. In a screen examination they saw a bismuth mass lodged in the œsophagus above the cardiac end. Shortly afterwards swallowing became almost impossible, and Mr. Stoney performed an operation which, undoubtedly, prolonged the patient's life. On *post mortem* examination the pleura on the left side was adherent, and all the abdominal viscera were adherent for no apparent reason. The œsophagus was, as had been expected, considerably distended. In the lower end of the œsophagus there was an accumulation of the stones of grapes which the patient had eaten during the last few days of life. The carcinoma was of the usual type. The specimen demonstrated the valvular form of opening which Mr. Stoney had effected.

Carcinoma of Œsophagus with Secondary Deposits.

DR. BOXWELL showed the viscera from a case of carcinoma of the œsophagus followed by abscess at the base of the right lung, with secondary deposits of the growth in the heart, liver, spleen.

suprarenals and kidneys. After reading a short clinical history of the case he demonstrated a carcinomatous ulcer at the cardiac end of the œsophagus. This ulcer had perforated into the right pleura, causing an abscess at the base of the right lung. Incorporated in the wall of the abscess was a large branch of the pulmonary vein. There was a small secondary deposit of the growth at the apex of the left ventricle, and the curiously symmetrical deposits in the suprarenals and kidneys seemed to point to a hæmic distribution. There were no secondary deposits in the lungs or bowel.

MR. LAW said he had had the opportunity of trying the œsophagoscope, and had found it generally possible to remove a small piece to put on the microscope. The measurements from the teeth to the obstruction were fairly average, but the distance varied considerably in different patients without much reason, and a margin had to be allowed before they could conclude where the tumour was.

MR. GUNN said it was very distressing to see such cases die, but he thought the time was not far distant when they would get the correct route, and be able to deal with them surgically.

DR. MOORHEAD, in reply to a question by Dr. Cahill, said the patient died of cachexia. They did not use the œsophagoscope, as the diagnosis was obvious.

Gastrectomy for a Rare Condition of the Stomach.

MR. WHEELER exhibited a stomach removed from a woman who had been sent to the hospital eleven days previously. She had vomited every day for the last year and a half, and succussion splash was marked. Diagnosis was stricture of the pylorus with dilated stomach. On operating he found not only a stricture at the pylorus, but a tumour of uncertain character on the lesser curvature, involving a deeply excavated ulcer and hard glands. In addition, when he pulled the stomach down further, he found an hour-glass constriction at the cardiac end. There was a very small pouch of stomach above the hour-glass constriction. The glands were found to be non-malignant, and the nucleus of the tumour turned out to be a chronic non-malignant ulcer. About three-fourths of the stomach were removed, and anastomosis was effected between the duodenum and the stump of the stomach. The patient had since developed a keen appetite, and was eating solids a week afterwards. She

was apparently perfectly well. Bismuth photographs were subsequently taken to show the result. He thought the triple lesion a rare condition.

Gangrenous Intestine following Strangulated Hernia.

MR. WHEELER also exhibited a specimen of the above. The hernia was of four days standing, and he had to take away about a foot of intestine. The specimen emphasised the necessity of not doing an anastomosis until the intestines had been drained for about a week.

MR. GUNN said the question of malignancy or non-malignancy was one of great difficulty. He had removed a small portion of the stomach for what he believed to be a malignant ulcer in an elderly man. Dr. Harvey examined it, and said it was not malignant, but after repeated examinations he came on several places with undoubted carcinomatous change in the ulcer. Unless, therefore, a series of sections was made, he thought Mr. Wheeler should be very doubtful as to his case being non-malignant.

DR. PEARSON said that in three hundred odd resections done at Rochester for carcinoma it had been found that in sixty-one per cent. of the cases of cancer of the stomach they could obtain a history indicative of pre-existing chronic ulcer. That set the matter at rest as to whether chronic ulcer predisposed to cancer.

DR. MOORHEAD cited a case of his own similar to Mr. Wheeler's in which the hour-glass stricture and the carcinoma were absolutely apart.

DR. CAHILL asked if any estimate had been made of pepsin or any examination for rennet. Where such obstruction occurred, one found rennet present and pepsin diminished.

DR. GOULDING could hardly believe that it was not carcinoma, and thought an exhaustive examination should be made.

MR. WHEELER, in reply, said his experience was that many such cases were non-malignant. He would have more sections made. Hydrochloric acid was present in small quantities. He believed further sections would also prove the tumour of the stomach non-malignant, notwithstanding the general opinion expressed to the contrary.

SECTION OF SURGERY.

President—J. LENTAIGNE, P.R.C.S.I.

Sectional Secretary—A. J. BLAYNEY, F.R.C.S.I.

Friday, December 17, 1909.

THE PRESIDENT in the Chair.

Some Points on the Operative Treatment of Malignant Disease of the Large Intestine.

MR. E. H. TAYLOR read a paper with this title.

SIR THOMAS MYLES expressed his pleasure at finding Mr. Taylor advocating what he himself had advocated for many years—that was, the absolute necessity for establishing all operative procedure on a solid anatomical basis. A paper of such range could not be adequately discussed in the time at their disposal. He was, however, anxious to know if Mr. Taylor wished them to assume that in the operations under discussion the glands were obviously diseased at the time, or that the removal of the whole area was intended as a prophylactic before there were any visible evidences of glandular disease. Assuming that the intermediate glands were palpably diseased, were they justified in concluding that removal of the area, immediately below the point at which the main branch of the inferior mesenteric artery came off, would guarantee the non-existence of the disease above that point? He concurred with the lecturer as regards the difficulty of effecting an anastomosis when they had to remove a large area starting from the splenic flexure to the upper part of the rectum. But besides the establishing of an artificial anus, there was also possible the attachment of the lower end of the ileum to the upper end of the rectum, or the implantation of the transverse colon on to the rectum, the lip of the colon making a T-shaped junction with the rectum. The difficulty of bringing the mobilised colon into the pelvis was sometimes very great, and sometimes did not exist. The paper had borne out what had been observed clinically—that in certain cases of removal of the lower bowel, when they got above a certain point, it was better to remove more and get a mobile colon than to bring down the upper part of the rectum.

THE PRESIDENT (Mr. Lentaigne) recalled a case which supported Mr. Taylor's remark—that the whip-cord form of cancer of the rectum was most amenable to surgical treatment, and least likely to give trouble by recurrence in the glands at an early stage. The patient was an old lady suffering from intestinal obstruction. He was able to decide that the large intestine was the seat of the obstruction. He opened over the cæcum, and found a lump on the left side of the abdomen opposite where his incision had been made. It seemed to be fairly movable, and he made an intestinal fistula by uniting the cæcum to the lips of the incision. The symptoms of obstruction at once got better, and shortly afterwards he performed a laparotomy, and found the growth, which was a slow-growing cancer of the lower segment. He removed it with about two inches of intestine above and below. An end to end anastomosis was done, and the patient apparently got quite well. Nine years later the patient became ill again, and he found her in a dying state. She had a history of diarrhœa for some months. He found unmistakable evidence of rectal cancer, and she died within a fortnight. The recurrence must have been at an exceedingly slow rate. The most difficult thing of all was to make an early diagnosis, the symptoms were so slight during the time when the cancer could be most safely and easily removed. It was, unfortunately, only when patients began to suffer pain that they came to the surgeon, and pain in the intestine came at even a later stage in the development of the disease than pain in the case of carcinoma of the breast.

MR. TAYLOR, in reply, said that even if no glands could be found diseased he thought the complete operation should be carried out. One was not justified always in concluding that because a gland was enlarged it was therefore malignant. If they had reason to believe that some of the secondary glands were involved he was afraid that the hope of radical cure was not great, as the chances were that the main glands would also be diseased. The disease might to some extent be septic, in which case one was justified in giving the patient the benefit of a radical operation. Where the glands were found diseased along the inferior mesenteric artery, the chance of a radical cure would be absolutely nil. In the case of cancer low down in the pelvic colon, what to do with the upper end was a great difficulty. To leave the patient with an artificial anus in the iliac region was the safest procedure. At the same time one would readily adopt

any other method that would restore continuity. The operation of drawing down the bowel was extremely grave, and the mortality was appalling.

Empyema of the Ethmoidal Cells with Symptoms of Trigeminal Neuralgia.

MR. O. GOGARTY read a paper on a case of suppuration of the ethmoidal cells, with symptoms of trigeminal neuralgia. A man, aged thirty-one, had been suffering for thirteen years from left side facial neuralgia of epileptiform type. The attacks were frequent, and often recurred several times in an hour. For nine months he lived on fluids alone, being unable to masticate. He described sores on the palate. In 1902, all the teeth, though sound, were removed above and below from the left side. Later the infra-orbital nerve was resected. He would not submit to removal of the Gasserian ganglion. In 1907 he was sent to me by Dr. Moorhead, Royal City of Dublin Hospital, to exclude possible involvement of the accessory sinuses. Trans-illumination revealed nothing. There was no atypical hypertrophy in the nose. On the antrum being washed out, a streak of pus was found. Both antrum and frontal sinus were sound. It was decided to open the ethmoidal cells. Pus came away freely when this was done. Subsequently necrosed bone and debris were removed. There has been no recurrence of neuralgia since March, 1907.

MR. MURPHY said the importance of early diagnosis and examination in such cases could not be over-estimated. The mechanical difficulties of getting at the ethmoidal sinus were very great, especially in a narrow nose.

SIR THOMAS MYLES desired more information as to what was meant by disease of the ethmoidal sinus. Was it possible that cases of so-called trigeminal neuralgia which had not been cured, had been due to the presence of the condition dealt with by Mr. Gogarty?

MR. E. H. TAYLOR thought the communication ought to be widely circulated, as it might be the means of bringing before the notice of specialists that in a certain proportion of cases a cure could be brought about by what, in Mr. Gogarty's hands, were apparently simple measures, rather than having to resort to such an extensive operation as the removal of the Gasserian ganglion.

THE PRESIDENT agreed with Mr. Taylor as to the desirability

of giving a wide circulation to the paper, which was of the utmost importance and value.

MR. GOGARTY, in reply, said his method of dealing with the case was as follows:—The anterior third of the middle turbinal bone was removed with Grünwald's scissors and Stoerk's snare, and the superior margin of the cut surface was punched away to the lamella with a conchotome. Five days later a sharp curved knife (Hajek's hook) was pressed against this, turned into the ethmoidal cells and pulled downwards. Pus at once came into view. A paroxysm ensued. When the patient recovered the opening was enlarged, and the pus followed with a conchotome. The anaesthetic was local—40 per cent. of cocaine solution. No tampon was introduced—the anterior nares being plugged with cotton wool and the patient warned against blowing his nose. On the Continent 92 per cent. of cases of empyema in the nose were supposed to come from influenza, and he considered that his case probably began with influenza infecting the frontal sinus, the decomposition in the confined space breaking down the septa and giving rise to the empyema.

THIRD INTERNATIONAL LARYNGO-RHINOLOGICAL CONGRESS.

WE have received from the President of the International Committee an intimation that the Third Laryngo-Rhinological Congress will be held at Berlin in 1911. The Laryngological Society of Berlin has, at its general meeting of January 14th of the present year, expressed its satisfaction that Berlin is to have the honour of receiving the Congress. The entire Board of the Laryngological Society has constituted itself the nucleus of an Executive Committee for the Congress, and will complete the Committee by co-opting well-known laryngologists of Germany. The Congress is to take place at the end of August or the beginning of September. Inquiries regarding the Congress should be addressed to the Secretary of the Executive Committee, Prof. A. Rosenberg, 26 Schiffbauerdamm, Berlin, N.W. 6, or to Dr. Finder, 17 Nettelbeckstrasse, Berlin, W. 62, Secretary to the International Committee, who has charged himself with the arrangements for papers and their authors.

SANITARY AND METEOROLOGICAL NOTES.

VITAL STATISTICS.

For four weeks ending Saturday, January 29, 1910.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended January 29, 1910, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 21.1 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,151,790. The deaths registered in each of the four weeks ended Saturday, January 29, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality :—

TOWNS, &c	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Jan. 8	Jan. 15	Jan. 22	Jan. 29			Jan. 8	Jan. 15	Jan. 22	Jan. 29	
22 Town Districts	19.7	22.3	19.1	21.1	20.5	Lisburn -	27.3	45.5	13.6	63.7	37.5
Armagh -	13.7	20.6	13.7	—	12.0	Londonderry	20.4	22.8	14.4	21.6	19.8
Ballymena	23.9	9.6	33.5	23.9	22.7	Lurgan -	8.9	22.1	8.9	31.0	17.7
Belfast -	19.7	22.7	16.7	20.1	19.8	Newry -	29.4	12.6	37.8	29.4	27.3
Clonmel -	10.3	—	20.5	20.5	12.8	Newtown- ards	22.9	11.4	28.6	28.6	22.9
Cork -	18.5	23.3	15.1	21.9	19.7	Portadown -	20.7	15.5	10.3	5.2	12.9
Drogheda -	4.1	24.5	20.4	20.4	17.4	Queenstown	19.8	6.6	13.2	26.4	16.5
Dublin - (Reg. Area)	21.1	22.1	22.5	21.7	21.8	Sligo -	24.0	9.6	4.8	14.4	13.2
Dundalk -	12.0	23.9	27.9	19.9	20.9	Tralee -	31.7	42.3	31.7	31.7	34.3
Galway -	7.8	19.4	11.7	27.2	16.5	Waterford -	11.7	23.4	17.5	13.6	16.6
Kilkenny -	19.7	14.7	4.9	24.6	16.0	Wexford -	9.3	23.3	32.7	4.7	17.5
Limerick -	21.9	30.1	20.5	16.4	22.2						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, January 29, 1910, were equal to an annual rate of 1.4 per 1,000, the rates varying from 0.0 in fourteen of the districts to 22.9 in Newtownards, the 5 deaths from all causes for that district including 2 from whooping-cough, one from diphtheria, and one from diarrhoea. Among the 151 deaths from all causes registered in Belfast are 13 from whooping-cough and one from enteric fever. Of the 32 deaths from all causes registered in Cork is one from enteric fever and one from diphtheria. Of the 12 deaths from all causes registered in Limerick, one is from whooping-cough, and 2 of the 14 deaths from all causes registered in Lisburn are also from whooping-cough. Included in the 6 deaths from all causes registered in Tralee are 2 deaths from whooping-cough.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 402,928, that of the City being 310,298, Rathmines 37,047, Pembroke 28,948, Blackrock 9,013, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, January 29, 1910, amounted to 162—93 boys and 69 girls; and the deaths to 177—94 males and 83 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 22.9 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the Area, the rate was 21.7 per 1,000. During the four weeks ending with Saturday, January 29, the death-rate averaged 22.9, and was 5.5 below the mean rate for the corresponding portions of the ten years 1900–1909.

The total deaths included one death from measles, one from whooping-cough, and one from scarlet fever, 2 deaths from enteric fever, and 2 deaths from diarrhoeal diseases of children under one year of age. The deaths of one infant under one year of age from enteritis and of one from *gastro-enteritis* were also

registered. Of the 9 deaths of persons from localities outside the Area, 2 were from enteric fever and one from epidemic enteritis. In each of the three preceding weeks deaths from measles had been 2, 0, 0; deaths from enteric fever had been 0, one, and 0; deaths from diarrhoeal diseases had been 2, 4, and 4; deaths from scarlet fever had been 0, 0, and 0; and deaths from whooping-cough had been 3, 5, and 4. There was one death from influenza, which in each of the three preceding weeks had caused 2, 3, and 5 deaths, respectively.

Of 14 deaths from pneumonia (all forms) there were 5 deaths from broncho-pneumonia, 2 deaths from lobar pneumonia, and there were 7 deaths from *pneumonia* (not defined).

The deaths (29) from all forms of tuberculous disease include 23 from tubercular phthisis (*phthisis*), 2 from tubercular meningitis, and 4 deaths from other forms of the disease. Deaths from all forms of tuberculous disease in the three preceding weeks had been 29, 25, and 27 respectively.

There were 4 deaths from carcinoma, one death from sarcoma, and 6 deaths from cancer, malignant disease (undefined).

Four deaths of prematurely born infants were recorded.

Of 12 deaths attributed to diseases of the brain and nervous system, 3 were those of infants under one year of age from *convulsions*.

Diseases of the heart and blood-vessels caused 17 deaths, and bronchitis caused 36 deaths.

There were 2 deaths from burns, one by drowning, and one death by suicide.

In nine instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 2 children under 5 years of age (including one infant under one year old), and the deaths of 5 persons aged 60 years and upwards.

Fifty-five of the persons whose deaths were registered during the week were under 5 years of age (39 being infants under one year, of whom 7 were under one month old), and 42 were aged 60 years and upwards, including 20 persons aged 70 and upwards, of whom 4 were octogenarians, and one (a man) was stated to have been aged 93 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," and the "Tuberculosis Prevention (Ireland) Act, 1908," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. R. A. O'Donovan, Medical Superintendent Officer of Health for Kingstown Urban District; and by Dr. Bailie, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended January 29, 1910, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Typhoid origin uncertain <i>a</i>	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Whooping cough	Cerebro-spinal Fever	Tubercular Phthisis (<i>Phthisis</i>)	Total
City of Dublin	Jan. 8	-	•	•	5	-	-	5	-	1	7	15	-	•	-	3	66
	Jan. 15	-	•	•	5	-	-	5	-	-	5	14	-	•	-	7	36
	Jan. 22	-	•	•	6	1	-	5	-	1	7	9	-	•	-	14	52
	Jan. 29	-	•	•	7	-	-	1	-	-	4	7	-	•	-	23	40
Rathmines and Rathgar Urban District	Jan. 8	-	•	•	3	-	-	1	-	-	1	-	-	•	•	•	5
	Jan. 15	-	•	•	-	-	-	3	-	-	-	-	-	•	•	•	3
	Jan. 22	-	•	•	-	-	-	1	-	-	-	-	-	•	•	•	1
	Jan. 29	-	•	•	-	-	-	1	-	-	-	-	-	•	•	•	1
Pembroke Urban District	Jan. 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Jan. 15	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2
	Jan. 22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Jan. 29	-	-	-	2	-	-	1	-	-	-	-	-	-	-	-	3
Blackrock Urban District	Jan. 8	-	•	•	-	-	-	1	-	-	-	-	-	•	•	•	1
	Jan. 15	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	Jan. 22	-	•	•	1	-	-	-	-	-	-	-	-	•	•	•	1
	Jan. 29	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
Kingstown Urban District	Jan. 8	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	1
	Jan. 15	-	•	•	-	-	-	-	-	-	-	1	-	•	•	•	2
	Jan. 22	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	Jan. 29	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
City of Belfast	Jan. 8	-	•	•	19	-	-	1	-	-	4	6	-	•	•	•	30
	Jan. 15	-	•	•	20	-	-	2	-	-	5	7	-	•	•	•	46
	Jan. 22	-	•	•	25	-	-	-	-	1	-	8	-	•	•	•	34
	Jan. 29	-	•	•	15	-	-	-	-	-	-	4	-	•	•	•	23

a Continued Fever.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended January 29, 1910, 3 cases of measles were admitted to hospital, 5 were discharged, and 11 cases remained under treatment at its close.

Eleven cases of scarlet fever were admitted to hospital. 10 were discharged, there was one death, and 53 cases remained under treatment at the close of the week. This number is exclusive of 16 convalescents from the disease under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital. At the close of the three preceding weeks the cases in hospital had been 63, 70, and 53 respectively.

Two cases of typhus remained under treatment in hospital at its close.

Five cases of diphtheria were admitted to hospital, 11 were discharged, and 32 patients remained under treatment at the close of the week. The cases in hospital at the close of the three preceding weeks had numbered 36, 33, and 38 respectively.

Six cases of enteric fever were admitted to hospital during the week, 9 were discharged, there were 2 deaths, and 34 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 20 cases of pneumonia were admitted to hospital, 11 were discharged, and 31 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, January 29, in 76 large English towns, including London (in which the rate was 15.7), was equal to an average annual death-rate of 16.3 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 19.1 per 1,000, the rate for Glasgow being 19.2, and for Edinburgh 15.9.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended January 29. From this report it appears that of a total of 65 cases notified, 28 were of scarlet fever, 22 of phthisis, 9 of diphtheria, 5 of erysipelas, and one of puerperal fever.

Among the 397 cases of infectious diseases in hospital at the close of the week were 194 cases of scarlet fever, 92 of measles, 51 of phthisis, 4 of whooping-cough, 40 of diphtheria, 5 of erysipelas, 3 of chicken-pox, and one of cerebro-spinal fever.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of January, 1910.

Mean Height of Barometer, - - -	29.770 inches.
Maximal Height of Barometer (6th, 9 p.m.), -	30.469 „
Minimal Height of Barometer (28th, 7 a.m.), -	28.734 „
Mean Dry-bulb Temperature, - - -	40.2°.
Mean Wet-bulb Temperature, - - -	38.6°.
Mean Dew-point Temperature, - - -	36.4°.
Mean Elastic Force (Tension) of Aqueous Vapour, .	.221 inch.
Mean Humidity, - - -	87.0 per cent.
Highest Temperature in Shade (on 2nd), -	56.4°.
Lowest Temperature in Shade (on 27th), -	24.1°.
Lowest Temperature on Grass (Radiation) (27th).	20.0°.
Mean Amount of Cloud, - - -	53.1 per cent.
Rainfall (on 17 days), - - -	2.993 inches.
Greatest Daily Rainfall (on 27th), - - -	1.310 „
General Directions of Wind, - - -	W., S.W.

Remarks.

During the first week the weather was very mild and dry, but dull, the general wind direction being between S.W. and W. A large anticyclone, lying upon the Continent, at times spread north-westwards to England, while cyclonic systems, central near Iceland, stretched across the Atlantic to Ireland, Scotland, and Norway. In the second week and first half of the third week (9th-19th) the cyclonic region embraced the whole of the British Isles, and baric gradients were very steep for S.W. to W. winds. The weather consequently became very unsettled, with strong and squally winds, frequent rain, and extremely unstable temperature. From the 19th to the 22nd atmospheric pressure was relatively low over the North Sea, but high over the Atlantic, and so the wind veered to N.W. and N. and temperature fell. The fourth week proved very inclement and cold, with frequent falls of cold rain, sleet or snow. On Sunday, the 23rd, the barometer

fell fast, and next morning was below 29 inches over the greater part of the British Isles. On Thursday, the 27th, a still deeper depression formed over these islands, the barometer falling to 28.70 in Wales next morning. This disturbance caused a snow-storm of great violence in the Dublin district, the moisture of a warm southerly air-current which passed across England being condensed by an indraft of intensely cold air from Scotland. The thermometer sank to -5° in the screen and to -8° on the ground at West Linton, Peebles, on the 26th. At 7 a.m. of the 28th the screened thermometer read 10° at Wick, 7° at Aberdeen, and 6° at Nairn, but 44° in London and at Dungeness, and 45° at Portland Bill. Dublin experienced the full fury of the blizzard, rain and snow yielding 1.653 inches in the gauge. A notable event in the month was the appearance in the evening sky, on and after the 22nd, of a fine comet, with a tail some 8 to 12 degrees of arc in length.

In Dublin the arithmetical mean temperature (40.9°) was below the average (41.7°) by 0.8 of a degree; the mean dry-bulb readings at 9 a.m. and 9 p.m. were 40.2° . In the forty-five years ending with 1910, January was coldest in 1881 (M. T. = 33.2°), and warmest in 1898 (M. T. = 47.8°). In 1909 the M. T. was 42.7° .

The mean height of the barometer was 29.770 inches, or 0.104 inch below the corrected average value for January—namely, 29.874 inches. The mercury rose to 30.469 inches at 9 p.m. of the 6th, and fell to 28.734 inches at 7 a.m. of the 28th. The observed range of atmospheric pressure was, therefore, 1.735 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 40.2° , or 1.6 above the value for January, 1909. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* $\times .52$), the M. T. becomes 41.1° , compared with a thirty-five years' (1871–1905) average of 41.9° . The arithmetical mean of the maximal and minimal readings was 40.9° , compared with a thirty-five years' average of 41.7° . On the 2nd the thermometer in the screen rose to 56.4° —wind, W.S.W.; on the 27th the temperature fell to 24.1° —wind, calm. The minimum on the grass was 20.0° on the 27th.

The rainfall was 2.993 inches, distributed over 17 days. Of this amount 1.310 inches fell on the 27th. The average rainfall for January in the thirty-five years, 1871–1905, inclusive, was 2.210

inches, and the average number of rainy days was 18. The rainfall, therefore, was above, while the rain-days were slightly below, the average. The record rainfall for January was in 1895—namely, 5.711 inches on 24 days. In 1876, only .406 inch was measured on but 9 days. In 1907, only .428 inch fell on but 9 days. In 1909, 1.264 inches fell on 14 days.

The atmosphere was foggy on the 4th, 7th and 27th. High winds were noted on 13 days, reaching the force of a gale on 4 days—the 8th, 9th, 16th and 18th. Snow or sleet fell on the 11th, 12th, 23rd, 24th, 25th, 26th and 28th; hail on the 8th, 11th, 16th and 26th. Solar halos were seen on the 14th and 27th; a lunar halo on the 18th, and lunar coronas on the 18th, 19th and 20th. Temperature reached or exceeded 50° in the screen on 11 days; while it fell to 32° in the screen on 8 nights, compared with only one night in 1909, 8 nights in 1908, 4 in 1907, 2 in 1906 and in 1905, 3 in 1904, 7 in 1903 and in 1902, 3 in 1901, but 18 in 1895. The minima on the grass were 32° or less on 14 nights, compared with 13 nights in 1909, 15 nights in 1908, 16 in 1907, 11 in 1906, 9 in 1905, 11 in 1904, 9 in 1903, 12 in 1902, 11 in 1901, and 29 in 1895. On the 29th the maximal temperature in the screen was 36.1°. Aurora borealis was seen on the evenings of the 12th and 31st.

In Dublin the rainfall up to January 31st, 1910, amounted to 2.993 inches on 17 days, compared with 1.264 inches on 14 days in 1909, 2.055 inches on 16 days in 1908, only .428 inch on but 9 days in 1907, 4.127 inches on 22 days in 1906, 1.897 inches on 14 days in 1905, 2.535 inches on 19 days in 1904, 3.269 inches on 20 days in 1903, 1.614 inches on 12 days in 1902, 2.672 inches on 17 days in 1901, only .406 inch on 9 days in 1876; and with a thirty-five years' average (1871–1905) of 2.210 inches on 18 days.

Mr. W. H. Clark, B.A., reports that at the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 29.767 inches, the range of atmospheric pressure being from 30.472 inches at 9 p.m. of the 6th to 28.747 inches at 9 a.m. of the 28th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 40.7°. The arithmetical mean of the daily maximal and minimal temperatures was 41.2°. The screened thermometers rose to 56.8° on the 2nd, and fell to 21.2° on the 27th. On the 27th the grass minimum was 12.8°. Rain fell on 17 days to the amount of 2.844 inches.

the greatest fall in 24 hours being .890 inch on the 28th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 42.35 hours, of which 4.6 hours occurred on the 29th, and 4.35 hours on the 30th. The mean daily duration of sunshine was 1.4 hours. The mean temperature of the soil at 9 a.m. at a depth of one foot was 40.6° ; at a depth of 4 feet it was 43.9° .

At the Ordnance Survey Office, Phoenix Park, Dublin, rain fell on 20 days to the amount of 3.049 inches, the greatest measurement in 24 hours being 1.250 inches on the 27th. The total duration of bright sunshine was 71.4 hours, the largest amount recorded on one day being 7.7 hours on the 29th.

Mr. R. Cathcart Dobbs, J.P., reports a rainfall of 4.430 inches on 20 days at Knockdolian, Greystones, Co. Wicklow, the largest measurement in 24 hours being 1.430 inches on the 27th.

At the Royal National Hospital for Consumption for Ireland, Newcastle, Co. Wicklow, Dr. Launcelot T. Burra measured 4.335 inches of rain on 19 days, the maximum in 24 hours being 1.53 inches (?) on the 28th. Snow fell on 4 days. The mean dry-bulb thermometer readings were 41.1° at 9 a.m., 40.9° at 9 p.m. The mean maximal temperature in the screen was 45.3° , the mean minimum was 35.4° , and the resultant mean temperature was 40.4° . The screened thermometers rose to 57.2° on the 2nd and fell to 20.0° on the 22nd. The "Daylight Comet" was seen between 5 15 and 6 30 p.m. on clear evenings during the latter part of the month.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 3.29 inches on 19 days, compared with only .362 inch on but 6 days in 1907, 1.495 inches on 14 days in 1908, and .87 inch on 12 days in 1909. The greatest fall in 24 hours was 1.465 inches on the 27th. The mean shade temperature was 35.5° , the extremes being—highest, 53° on the 9th; lowest, 17° on the 26th. Snow fell on 5 days.

Dr. Arthur S. Goff reports that the rainfall at Lynton, Dundrum, Co. Dublin, was 3.34 inches on 18 days, the greatest daily measurement being 1.84 inches on the 27th. The thermometer in the shade ranged from 57° on the 1st to 24° on the 27th. The mean shade temperature was 40.4° . Snow fell on the 10th, 11th, 25th and 27th.

At Druid Lodge, Killiney, Co. Dublin, Mrs. George B. Symes

measured 2.55 inches of rain on 17 days. The largest fall in 24 hours was 1.25 inches in the snowstorm of the 27th-28th. This station continues the rainfall observations of Mr. Robert O'B. Furlong, C.B.

Dr. Christopher Joynt, F.R.C.P.I., recorded 3.410 inches of rain on 19 days at 21 Leeson Park, Dublin. The heaviest fall in 24 hours was 1.610 inches on the 27th.

In Cork, Mr. William Miller measured 2.79 inches of rain on 25 days, the greatest rainfall in 24 hours was .44 inch on the 23rd. The rainfall was 1.41 inches in defect of the average for January.

The Rev. Arthur Wilson, M.A., reports that rain fell on 28 days at the Rectory, Dunmanway, Co. Cork, to the amount of 6.43 inches. The heaviest fall was .81 inch on the 15th. Thunder and lightning occurred on the 10th and 16th. The first week was very mild, with drizzling rain. Very unsettled weather prevailed through the remainder of the month, although there were some very fine bright days, such as the 6th, 19th, 20th, 22nd, 25th and 28th. Snow fell on the 26th to a depth of $2\frac{1}{2}$ inches, and there were fresh showers of snow daily to the end of the month.

At Derreen, Kenmare, Co. Kerry, Mr. W. Holbrow measured 6.22 inches of rain on 28 days. The largest measurement on any one day was .68 inch on the 23rd. January was a stormy month at Derreen. Thunder occurred on the 15th, 16th and 23rd. The thermometer fell to 20° on the 28th.

PERISCOPE.

CANCER OF THE FEMALE BREAST.

IN an article in the *Medical Record* for December 4, 1909, Jabez N. Jackson, of Kansas City, draws particular attention to the importance of the early diagnosis, if possible before glands in the axilla can be felt, as this means that the chances of permanent cure are at least doubled. He mentions the danger of removing a piece of doubtful tumour for microscopic examination, unless it is rapidly examined in frozen sections, and the operation completed at the same sitting if malignancy is found. Halstead has shown that in cases of cancer of the breast where this course (a double operation) has been pursued not one single case has ever been finally cured. He concludes with the following epitome:—(1) At least 90 to 95 per cent. of all tumours of the breast

are malignant, and no possible intelligence can determine which of the remaining 10 or 5 per cent. will remain benign. (2) There is no known cure for any tumour of the breast, benign or malignant, except through surgical removal. (3) From 25 to 50 per cent. of cases of breast cancer are permanently cured by radical surgical removal. With early diagnosis this percentage could be raised to 80 per cent. (4) Every tumour of the breast, therefore, should be considered malignant, and treated as such at the very first moment of its detection, unless incision has proved it benign, in which instance local incision at least should be insisted upon. (5) To trifle with tumours of the breast is, therefore, practically nothing short of criminal.

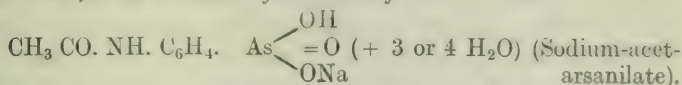
EARLY TREPHINING FOR SEVERE INJURIES OF THE SKULL.

IN the *Medical Record* for December 4, 1909, is a paper on this subject by M. S. Kakels, of New York, with a report of cases operated upon. In this paper the author strongly advocates the necessity of early operation in all cases of severe head injuries, irrespective of the presence or absence of localising signs, as even if the source of pressure on the brain is not found, room is given for the brain to expand, and a fatal issue may thus be averted. He gives the history of ten cases of head injury successfully operated on. We must confess that in all these cases there were sufficient signs present to clearly indicate operation, as secondary unconsciousness, convulsions, depressed fractures, hematoma, &c. In this class of cases it is easy to decide for operation, the difficult ones are those in which—at first at any rate—there is nothing definite beyond the unconsciousness, and in these one usually has to wait till symptoms of increasing intracranial pressure supervene, and then we may find that we have waited too long. We entirely agree with his concluding remarks: “The propriety of exploring fractures of the cranial vault, by incision of the soft parts and elevation of bone, if depressed, is conceded by the majority of surgeons. In compound fractures, exploration is positively indicated. In presumptive simple fractures, with a history of severe traumas, whether a depression is felt or not, whether there exists a hematoma or not, and with general symptoms, such as the state of consciousness, character of the pulse, temperature, and respiration, accompanied with muscular or nervous symptoms, expectant treatment, to any mind, is hazardous. A survey of the cases reported and their results fully

bear out the opinion, as expressed in this paper, that an early exploratory operation is indicated in every severe injury to or over the vertex accompanied by such symptoms as would lead us to presume that there may exist a lesion either of the skull or, what is more important, its contents. We must always bear in mind that in considering severe injuries of the skull, it is to the more serious lesions of its contents which so frequently accompany them that importance must be attached rather than to the fracture itself.

ARSACETIN.*

THIS new arsenic preparation is derived from para-amino-phenyl-arsenic acid, from which acetyl-amino-phenyl-arsenic acid is obtained by acetylising. The sodium salt of this acid is called **arsacetin**, and is an acetylated atoxyl: ^a



It forms a white powder, soluble in ten parts of cold water and in about three parts of hot water. The preparation may be sterilised at 100–130° C. without decomposition. Ehrlich, Browning and Salmon found arsacetin to be three to five times less poisonous than atoxyl for various animals, while its power of injuring trypanosomes appears to be greater. Thus the pharmacological results justify its therapeutic application. The first trials in this direction were those of Neisser. His method of treatment was to give twenty injections of 0.6 grm. (gr. 10) of arsacetin, one injection being given on each of two consecutive days in each week. In a few cases only, gastric disturbances resulted from this treatment in women, but no other secondary effects were observed. Neisser advises that until arsacetin has been more thoroughly investigated the use of mercury should not be neglected in syphilis, but that the mercury and the arsacetin treatment should be combined in a suitable manner. In G. Heymann's opinion, arsacetin possesses simply a symptomatic action. In secondary syphilis the effect is less certain and less enduring than in that of mercury. In primary

* See Merck's Report, 1907, p. 36. Ehrlich, *Berliner klinische Wochenschrift*, 1907, No. 9-12. Browning, *British Medical Journal*, 1907, p. 1105. *Journal of Pathology and Bacteriology*, 1908, Vol. 12. Salmon, *Comptes rendus de l'Académie des Sciences*, 1908, p. 1342; *Repertoire de pharmacie*, 1908, p. 400. Neisser, *Deutsche medizinische Wochenschrift*, 1908, No. 35, p. 1500.

syphilis it has not the power of preventing the occurrence of secondary affections, nor has it the power of preventing relapses. His observations lead to the result that mercurial treatment is attended with less unpleasant secondary manifestations than is treatment by arsacotin. In trypanosomiasis and syphilis, 6 cc. (m 96) of a 10 p. c. aqueous solution of arsacotin are injected on two consecutive days in each week for ten weeks. In disorders of metabolism, subcutaneous doses of 0.1–0.5 gm. (gr. $1\frac{1}{2}$ –8) of arsacotin are used. Internally the dose for adults is 0.05 gm. (gr. $\frac{5}{10}$) three times a day, for children 0.05 gm. (gr. $\frac{5}{10}$) twice a day.—*E. Merck's Annual Report*, 1908, Darmstadt, August, 1909.

SHAVING AND SKIN DISEASE.

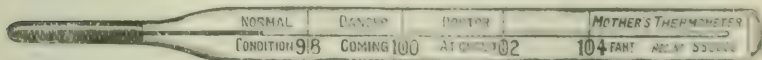
In a recent issue of the *British Medical Journal* it was stated that hairdressers most naturally feel grave concern regarding the result of several actions at law in which damages have been awarded for what is known as a "foul shave." Cases at Hull and Huddersfield were lately followed by another in the Manchester Court of Record, when the plaintiff said that while being shaved by a local hairdresser he received a slight cut. The same evening he noticed that watery matter came from the wound. Several days after a skin disease developed, and he went to a doctor, who pronounced it to be impetigo contagiosa. This medical man in his evidence said he had no doubt the cause of the disease was the cut which, when he saw it, was surrounded by a number of tiny blisters. The period of incubation, he said, was from twenty-four hours, or even less, to forty-eight hours before the specific signs of the disease would be seen, and it would take from one to two days for matter to form. The witness added that the germ of the disease need not necessarily have been on the razor, but might have been introduced by the towels or sponges used in the shop. For the defence Dr. Sankey, police surgeon, said that matter could not possibly flow from the wound an hour or two after it was caused, nor could the disease be spreading over the face and neck the following day. Dr. Wolstenholme, medical referee to the Salford Hairdressers' Association, said that impetigo could be got in numerous other ways besides shaving; a frayed collar, for instance, might be the cause, or plaintiff might have had the germs in him beforehand. In the circumstances it was impossible he should have contracted the disease at defendant's saloon. The judge instructed the jury

that for the plaintiff to be entitled to a verdict it was necessary to prove that "the illness had been caused by an act for which the defendant was responsible." The jury found for the plaintiff, and awarded £24 damages. Without criticising the decision of the jury, the serious result to the hairdresser of the case quoted above may be used to point a moral. Of late years there has been an immense improvement in the hygienic conditions of shaving saloons, and it is within the power of every hairdresser to adopt such precautions that the possibility of any skin disease being contracted on his premises is practically excluded. Leading members of the trade have for some time past made it a rule that before and after use on each individual customer the razor should be dipped in a vessel containing diluted izal fluid, and in many cases the soap used also contains the antiseptic virtues of izal. The careful hairdresser will also insist on the sponges, rubbers and brushes used in his saloon being thoroughly saturated with izal solution at frequent intervals, and when evidence of such care is produced it may be safely affirmed that no jury would hold a hairdresser responsible for any case of skin disease among his customers.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

The "Lady Aberdeen" Maternal Clinical Thermometer.

THIS household or "Mother's Thermometer" was constructed at the suggestion of Dr. Sévérin La Chapelle, of Montreal. That physician, in his efforts to combat the abnormally high infant mortality in that city, found the pressing need for a simple clinical thermometer, the systematic use of which would give a mother the necessary warning to call in the doctor to her ailing child. As will be seen from the accompanying illustration,



the feature of the instrument is the simplicity of the markings on its scale, which also is large and legible. Instead of the several degrees and their sub-divisions being engraved on the stem, only the round numbers, 98, 100, 102, and 104, according to Fahrenheit's scale, are so engraved. Below 98 are the words

"Normal Condition," between 98 and 100 are the words "Danger coming," and between 100 and 102 may be read "Doctor at once." It will thus be seen that from the "Lady Aberdeen" clinical thermometer the many and confusing figures of the ordinary instrument are omitted, only the above three indications being clearly and plainly engraved on a porcelain scale, which is enclosed in a glass cylinder or tube, the smooth external surface of which can be thoroughly cleansed and rendered aseptic whenever it has been used. Directions how to use the thermometer accompany each instrument, the retail price of which is only two shillings. Dr. La Chapelle has given Her Excellency the Countess of Aberdeen permission to introduce this handy clinical thermometer into the United Kingdom for the benefit of the Women's National Health Association of Ireland. Mr. James J. Hicks, of 10 Hatton Garden, London, E.C., is introducing the "Mother's Thermometer" to the trade.

"Vaporole" Ammonium Chloride Inhaler.

THE "Vaporole" Ammonium Chloride Inhaler, introduced to the notice of the Profession by Messrs. Burroughs, Wellcome & Company, consists of a compact apparatus which will, whenever required, deliver perfectly neutral vapour of pure and freshly-prepared ammonium chloride. Many advantages are possessed by the "Vaporole" Inhaler over the ordinary forms. It has no rubber connecting-tubes to deteriorate, loosen or become clogged with crystals of ammonium chloride. Supplies of acid and alkali sufficient for each application are carried separately in hermetically-sealed "Vaporole" containers, and will maintain their full strength and remain instantly available for any length of time until required for use. Thus with the "Vaporole" Inhaler there are no cumbersome bottles, no stock liquids of a dangerous and volatile nature, and no glass stoppers to get detached, misplaced or lost. The compactness, simplicity and efficiency which characterise the whole apparatus ensure portability, facilitate application, and make for certainty of result. Each "Vaporole" Inhaler, together with a supply of "Vaporole" Acid and "Vaporole" Alkali, is securely packed in a neat case, of which the dimensions are $6 \times 2\frac{1}{2} \times 2$ inches.

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MEDICAL SCIENCE.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. IX.—*A Case of Acute Leukæmia.*^a By RICHARD TRAVERS SMITH, M.D. Dubl., F.R.C.P.I., Visiting Physician to the Richmond, Whitworth, and Hardwicke Hospitals: and HENRY C. EARL, M.D. Dubl., F.R.C.P.I., Pathologist to the Richmond, Whitworth, and Hardwicke Hospitals.

CASE.—H. R., aged twenty, domestic servant, was sent by her mistress to consult me on October 27, 1909. In general appearance there was nothing noteworthy, except that she looked anæmic. She had auburn hair, fair skin, and was distinctly inclined to be stout. She told me that a fortnight previously she got a bad cold, had generalised pains, and felt shivery. For a few months previously, but more since the cold, she had noticed her nose stopped. On *physical examination* nothing abnormal was found except the nasal obstruction, pallor of the mucous membranes, a few enlarged glands in the right anterior triangle of the neck, and one enlarged gland in the left axilla. Some of her teeth were decayed or septic. There was no fever.

Family history.—Father and mother were living and in good health, as were five sisters and four brothers: none of her

^a Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, February 18, 1910.

immediate family were dead, but some first cousins had died of consumption. Her previous personal history told that she had had pneumonia twice, six and eight years ago, and had had measles and scarlatina in childhood. Not being able to arrive at a definite diagnosis I had advised her to come into the Whitworth Hospital, which she did a week later. On admission her temperature was 102° , pulse 100; her general aspect suggested severe illness; the glands at the right side of neck had become larger, and some could be felt on the left. The spleen was normal in size. The urine contained a little albumen, but no casts.

A blood examination, in the course of a day or two, showed red corpuscles 3,024,000; white corpuscles, 192,000 per c.mm. The hæmoglobin was 55 per cent., lymphocytes 8.1 per cent., polynuclear neutrophiles 3.2 per cent., transitional 88.7. Under these circumstances the diagnosis was made of so-called acute lymphatic leukæmia. From this time on the blood examinations were kindly made by Dr. Earl.

Further progress of the case.—A few days after admission the gums, especially in the region of septic teeth, were noticed very swollen, and a little later they became deeply gangrenous. Separate foci of gangrene arose in the buccal mucous membranes and in the soft palate; these spread rapidly, and coalesced till almost the whole interior of the mouth could be seen as a mass of gangrenous sloughs. Soon after admission the spleen was noted large upon percussion; a few days later it had become palpable; before death it could be felt near the umbilicus. The glands in neck became rapidly larger, so as to produce marked visible swelling. The axillary glands, however, did not become involved, with the exception of one in left axilla previously noted. A moderate diarrhœa persisted through the illness. The temperature varied from 101° to 103° till four days before death, when it fell critically. This was attended by a noteworthy diminution in the size of the cervical glands. Even, apart from the blood examinations, the patient became obviously more and more anæmic, and gradually sank into a semi-comatose state. She died on November 21st, twenty days after her admission into hospital, about five weeks from her first complaint of any definite illness.

Treatment consisted in endeavouring to antisepticise the mouth, the administration of 4,000 units of anti-diphtheritic serum, lest diphtheria bacilli might be among the copious flora

that grew from mouth culture. Salol and arsenic were given internally with a view to acting as intestinal antiseptics.

A thorough *post-mortem* was made by Dr. Earl.

On November 9th the blood was examined with the following result :—

Hæmoglobin	-	60 per cent. of normal.
Red cells	-	3,024,000 per c.cm.
White cells	-	192,000 „

There were a few normoblasts, otherwise the red cells were histologically normal. A differential count of the white cells gave—

Small lymphocytes	-	8.1 per cent.
Polynuclear neutrophile cells	3.2	„
Transitional cells	-	88.7 „

Thus, in a c.cm. of blood there were 6,094 polynuclear neutrophile cells and 15,360 small lymphocytes, the lymphocytes showing an absolute increase and the polynuclear neutrophile cells a slight absolute diminution.

On November 15th the following result was obtained :—

Hæmoglobin	-	30 per cent. of normal.
Red cells	-	1,776,000 per c.cm.
White cells	-	132,000 „

Of the white cells there were—

Lymphocytes	-	13.4 per cent.
Polynuclear neutrophile cells	2.7	„
Transitional	-	83.9 „

On November 18th there were—

Hæmoglobin	-	30 per cent.
Red cells	-	1,680,000 per c.cm.
White cells	-	182,000 „

A differential count of the white cells gave on that occasion the following result :—

		Per cent.	Per c.cm.
Large lymphocytes	-	1.5	2,720
Small lymphocytes	-	22	40,820
Transitional cells	-	74	134,600
Polynuclear neutrophile cells	-	2	3,640
Eosinophile cells	-	.5	910

The number of lymphocytes showed a marked increase during the progress of the case. There were more normoblasts than at

the earlier examinations. The transitional cells described here had all the general characters of those in normal blood. They showed red granules with triacid stain, but in well-stained Giemsa or Leishman films fine azurophile granules, and with methylene blue alone very fine basophile granules, were seen.

Post-mortem examination, made thirteen hours after death, the right lung was adherent by numerous firm adhesions to the chest wall. The spleen was very large (it weighed 1,265 grammes) and very soft. On section it was of a red colour, with areas of darker red and white. The lymphatic glands in the mediastinum were enlarged, but not markedly so. On section they showed caseous areas. A much enlarged gland, which on section was caseous, was removed from the left axilla. The lymphatic glands in the abdomen were not at all enlarged, and there was no enlargement of the lymphoid structures in the intestine. The kidneys were very pale. The liver was very large, but not increased in weight. On section of it a frothy fluid escaped. The organ was spongy in consistence, and portions removed from several parts of it floated in water. The spongy appearance was less marked on the anterior surface, where the organ appeared solid—though it floated in water—than elsewhere. The greater part of the organ had on section much the appearance of a rubber sponge. A Gram-staining micro-organism, which grew anaërobically and produced gas, was isolated from the liver. It had the general characters of *Bacillus phlegmonis emphysematosæ*. The marrow of the shaft of the femur was red and gelatinous in appearance. The other organs were very anæmic, but otherwise normal. The enlarged glands from the mediastinum and axilla were found on histological examination to be tuberculous. The other glands were histologically normal except that about one in four of the cells in the lymphoid tissue was a transitional cell. The marrow of the femur was composed largely of cells resembling transitional cells, and hardly any granules could be made out with triacid stain in films or sections of the marrow. The pulp of the spleen contained many transitional cells. The dark red and white areas noted above were found to be thrombi. The liver showed the cell infiltration commonly seen in chronic lymphatic leukemia. The cells were partly small lymphocytes and partly transitional cells. The kidney was normal, and showed no cell infiltration.

ART. X. - *The Physico-Therapy of Sciatica.*^a By M. ORB, M.D. University of Erlangen (Germany), Resident Physician, St. Ann's Hill Hydro., Co. Cork.

THE various methods of physico-therapy have as a common physiological foundation "the using of the natural reactions of the organisms as an end to removing organic disturbances." Although these methods of treatment have been developed separately from medicinal methods, and although there was formerly a great contrast between the representatives of each method of treatment, to-day this antagonism no longer exists. Physico-therapy is taught in many Universities as an important element in our medical armamentarium in full agreement with, and indeed often by, the occupier of the Chair of Medicine. Indeed, both branches of our science "start from the very same point from the pathological condition and clinical experience, and both aim towards the same end - the recovery of our patients." In the treatment of sciatica, which I have selected as my subject, I can see no antagonism between medicinal treatment and physico-therapy, which are rather supplementary one to the other. And although speaking now only about physical methods of treatment I may at once state that I should be sorry to deprive myself of the approved value of the remedies in our *Materia Medica*.

Before I go into details I may say that I intend to speak only about the methods which I have found useful in the treatment of genuine sciatica, and that I do not include those cases in which syphilis, diabetes, tumours, &c., produce symptoms of sciatica, and in which the treatment of the cause must be the main object.

I may further abstain from any special classification of sciatica, in so far as it may be neuralgic, neuritic, or perineuritic; for my purpose I think it most practical to discriminate only between acute cases of sciatica and chronic cases.

^a Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, February 18, 1910.

There are many physical methods of treatment, and they often seem to be opposed to each other. But the underlying principle of all of them is stimulation, and this may be obtained by variations in temperature, by the electric current, by mechanical and chemical means, or by a mixture of all these. If we contemplate our methods from this point of view we can easily explain the same result in spite of the variety of application. Most of them produce a change in the circulation, as well in the parts of the body immediately touched by the application as in the more remote parts, by reflex action. As a general rule, the more acute the case appears to be the milder must our therapeutic measures be.

Considering first the most acute cases of sciatica we shall give only a treatment that can be easily combined with complete rest in bed. Hot poultices have an old reputation for lessening pain, and the new apparatus—thermophors, electro-thermophors, as well as fangopacks, hot sandbaths, &c.—rest on the same principle. I have not seen much result from cold sprays of chloride of methyl, &c., as recommended by Debove, and prefer the hot application. Hot foot-baths of 110° to 115° F., and about ten minutes' duration, are often very useful, and relieve the pain. In this country I have seen blisters and acupuncture very often applied. In my part of the world they are not often used, as their efficacy, which is certainly beyond doubt, does not generally last long, and it is difficult to repeat them often. I believe dry cupping glasses will have the same effect, and they have this advantage that the patients themselves can use them, and so their application may be frequently repeated. I have seen very good results in acute cases from wet packs on the hip and leg made with linen or silk bandages, wrung out in water of 60° to 70° , and covered with a double layer of flannel. They get warm very soon, and reduce the pains remarkably well, as I observed in a very severe case just lately. Dr. Friedländer, of Wiesbaden, recommends the renewal of these packs every three hours

during the daytime, and leaves them unchanged during the night. I can recommend this remedy very strongly.

Some authors employ massage in the acute cases, but I am quite against using it generally in these cases, especially as the hard pressure often employed by masseurs may considerably increase the pains. But very light friction carefully applied by the doctor himself, avoiding the most painful spots, is sometimes very useful.

Only a few words about electric treatment. I do not apply the electric current very often; if I do, I give the galvanic current in acute and chronic cases. I use two equal-sized electrodes, each 10 square inches in area: the negative I place on the abdomen, the positive on the posterior iliac spine or the sciatic notch, and I move both evenly along the leg without interruption of the current. I seldom give more than 3 M.A., never more than 8 to 10 M.A. I have no personal experience of the action of high-frequency current in cases of sciatica. Some authors, as Kehane, of Vienna, recommend it very much, others express a very reserved opinion or attribute to high-frequency no better success than to the galvanic current. It is difficult to judge, as other methods are usually employed besides electricity, and the pure effects of the latter are seldom tested.

Whilst the application of physical methods of treatment is limited in the acutest cases of sciatica, it has ample scope in the subacute and chronic cases. In these cases massage is used most frequently. It is necessary to employ very light massage at the beginning of a course of treatment in order to avoid unnecessary and undesirable pains. As improvement takes place, massage may be more energetic. Then tapotement, intermittent pressure, and vibrations over the sciatic notch and the other painful spots are useful. Vibratory massage given by one of the numerous apparatus will be found successful very often. I may mention that generally it is not advisable to give massage for longer than fifteen minutes daily in sciatic cases. Too long an application makes the patients

irritable. Once the pain is lessening I recommend gymnastics; and here, too, we must be careful not to overdo them. One must order precisely the special kind of gymnastics and their duration, and must gradually increase them. A little book by Dr. Schreiber, entitled "Medical Indoor Gymnastics," published by Williams & Norgate, London, which contains a number of illustrations, has been very useful to me in many instances besides cases of sciatica. As well as gymnastics I order exercises which induce a non-surgical stretching of the sciatic nerve. Zabłudowski gives the following advice to that intent:—"The patient should stand at such a distance from the door that he can easily touch the key-hole with his sound foot. He then lifts the affected leg, without bending the knee, as high as possible, pressing the sole of the foot against the door. The height obtained can be marked with a pencil, and the patient must try to get a little higher every day." A similar result may be obtained by passively lifting the stretched leg as high as possible while the patient is lying quietly on his back. I prefer the active stretching, as passive stretching, if not given very cautiously, may make the symptoms worse, whilst the patient surely will not overdo the practice of the active exercise.

The combined effect of massage, gymnastics, and hydrotherapy, as administered in the Vichy and Aix douches, is very highly recommended, especially in the United Kingdom and France. I appreciate this treatment very much in some cases of chronic rheumatism and gout—I admit, too, its advantage in the treatment of sciatica—but I prefer as a rule to give massage and douches separately. The hands of the masseur slip during the wet massage of the Vichy and Aix douche, and so it is very difficult to obtain an exact and deep effect, and for this reason I generally order the douches entirely separate, either immediately before or after the massage.

The mention of douches leads me to speak of the various

methods by which hydrotherapy enables us to attack the disease. I must dwell a little on this subject, as I have found the methods no less useful than other methods and not so well known as they deserve to be. I may mention as very useful the steam douche, the hot water ray, and the Scotch douche. The last has a mechanism enabling us to alternate applications of hot and cold water without any interruption. At the beginning of the treatment I usually give steam douches of 4 to 6 lbs. pressure along the sciatic nerve. When the patient can easily bear this I go on to a hot ray of 110° to 115° , and later on I apply the Scotch douche. I give massage generally before this douche, then put the nerve under the influence of a hot ray of 110° to 115° for one minute, immediately followed by a cold ray for five to ten seconds, and I repeat this alternating douche two or three times. All these douches produce a hyperæmia along the nerve, and anyone who has seen the red stripe after the application will understand the great effect. Certainly some cases do not react successfully to the douche: and here, as in other branches of our science, we must carefully avoid a routine treatment. As the effect is almost the same, I may mention that hot air douches and hot and cold air douches have been often recommended in late years. Formerly they could be applied only by means of very expensive apparatus, but now some very practical apparatus is constructed, which is applicable wherever electric current is available.

To return to hydropathic treatment, I may mention that plain reclining baths often suit patients very well. They should be 94° at the beginning and of fifteen minutes' duration. During the course of treatment both temperature and duration may be increased the temperature to 99° to 100° , the duration to half an hour. After them an hour's rest is absolutely necessary. The effect of temperature may be combined with the chemical effect of brine, pine, &c., added to the water, or Nauheim baths, which I do not give for longer than ten to twenty minutes, may be used, the effect of which is

chiefly due to the friction of the carbonic acid gas bubbles bursting and regenerating. The value of natural springs depends chiefly on the same principle. Whether the radium emanation found in most of them has a curative power is questionable. If proved to be really efficacious the use of natural springs may become unnecessary, for several companies already sell radium emanation for baths and drinking purposes. However, the time for speaking definitely on this point has not yet come.

The packs I spoke of before may be given with good results in chronic cases, too. Hot sitz baths, which *a priori* might appear useful, are contraindicated, as the overflexing of the thigh during such a bath increases the pain. A few words about the use of Turkish and electric light baths. The effect of both is the same – the former has conducting heat as its efficacious principle in producing a perspiration, the latter radiating heat. As radiating heat produces perspiration by a lower temperature than conducting heat, some patients will find the electric light bath more agreeable, but I do not think that the electric light bath has any specific effect which might influence one to prefer it to other baths which produce perspiration. Especially the use of blue light, very often recommended in advertisements of light baths in cases of neuralgia, neuritis, &c., is not warranted. In the treatment of sciatica certainly good results may follow electric light baths of the whole body or of the affected leg: but provided the heart is sound, or at least well compensated, I prefer the use of Turkish baths – we call them Irish baths on the Continent – because the patient can perform gymnastics in them, and these are always easier when the pain is modified by the influence of heat.

Thus we see that we have many methods of physico-therapy to help us in dealing with the disease. I do not wish to finish, however, before trying to anticipate some objections you may have, in so far as you may suppose that these methods are useful in a fully-equipped hospital, but not applicable for the general practitioner.

Therefore, I want to point out that most of the forms of treatment described can be easily executed in every private house, and even in the poorest habitation. Some examples may prove it. We find potatoes in the poorest family. Hot mashed potatoes put in woollen cloth are an excellent material for hot poultices, as I often saw whilst practising in a very poor Polish district of Germany. The above-mentioned packs on the hip and the leg require only some yards of old linen, ten to fifteen inches wide, and a suitable piece of flannel as cover can be procured very cheaply. But the douches! If there is a bath-room in the patient's house the doctor may easily adapt an indiarubber pipe to the tap or the shower and apply any kind of douches. In case no bath-room is available, a big watering-pot, of which the rose is removed, enables one to give a douche of any temperature, and taking two one with hot, one with cold water we have a very good and cheap substitute for the Scotch douche. As I have said before, all these different forms of treatment depend partly on the effect of varying temperatures, and even admitted that the other chemical and physical stimuli, which are not available at home, have a good result, we can easily construct substitutes which enable the general practitioner to apply these methods in any, even the poorest, house.

I shall be more than satisfied if this paper influences some of my audience to try these methods in their practice. I am sure they would find great satisfaction and success by doing so.

ART. XI.—*Piroplasmosis and Experimental Piroplasmosis.*^a

By A. E. METTAM, B.Sc., M.R.C.V.S., M.R.I.A.:

Principal of the Royal Veterinary College of Ireland:

Professor of Pathology and Bacteriology in the College.

PIROPLASMOSIS is an infectious disease due to the presence in the red blood corpuscles of an animal parasite

^aRead before the Section of Pathology of the Royal Academy of Medicine in Ireland, on Friday, March 4, 1910.

a piroplasm. The Piroplasmata are protozoa of the group Sporozoa, belonging to the sub-division Hæmosporidia. The complete life-history is not yet known. The definitive host is a tick, and the disease is transmitted by an infected tick. The life history in the tick is not understood, but probably the sexual stage of the parasite's existence occurs in the tick—in the mammal the schizogonous stage alone is passed just as in malaria in man. In piroplasmosis, however, we do not recognise either macrogametes or microgametes—the phases of development observed are those associated with the formation of merozoites or spores. The parasite in the corpuscles divides entirely into two merozoites or spores, which sooner or later leave the corpuscle, or the corpuscle dissolves and sets them free, and the free parasites then invade other corpuscles to again go through the same process.

Piroplasmosis is observed among the domestic animals, in the horse, ox, sheep, and dog, and probably in the ox there are several different parasites capable of producing disease varying somewhat in severity and in symptoms. It is a remarkable fact that the Piroplasmata pathogenic for one species of animal are not capable of producing disease in another species—that, in other words, Piroplasmata of the ox are not capable of producing disease in the horse, sheep, and dog, and the organisms found in these animals are incapable of infecting the ox. The usual laboratory animals cannot be utilised, they are not infected, and consequently in research only animals of the same species can be utilised in any investigation made into the piroplasmosis of any particular species. Many of the piroplasmoses may be produced by inoculation of infective blood, and after a period of incubation, varying with different Piroplasmata, infection is established, and in some cases hæmoglobinuria appears.

Hæmoglobinuria is a common symptom in native piroplasmosis as it is in Texas fever and allied infections, but not in all. There are certain piroplasmoses where hæmoglobinuria is absent and jaundice is pronounced.

In equine and canine piroplasmosis the icterus is intense, and the former infection is called biliary fever, the latter malignant jaundice. In dogs, however, hæmoglobinuria is not uncommon, and the first case recorded in France had attention first directed to it by the hæmoglobinuria shown by the patient. Animals that have recovered from an attack of piroplasmosis are immune, though the immunity may break down either by a second virulent infection or by some intercurrent infection. Moreover, the blood of such immune animals is infective though the parasites cannot be found by the most careful and pains-taking search of blood films. Injection of the blood into susceptible animals may be successful in setting up infection. Ticks feeding upon such immune animals become infective, and are capable of infecting susceptible animals upon which they feed. Immune animals, therefore, pastured with non-immunes may be the source of an infection through the medium of ticks.

What I have just said applies to most forms of piroplasmosis, but there is the infection known as East Coast Fever, which differs in a remarkable fashion from ordinary Red Water. The organism is a small parasite, sometimes bacillary in form—the so-called *Piroplasma parvum*. The infection is extremely fatal—more than 90 per cent of infected animals die, and it threatened to annihilate the herds of South and East Africa. In pure infections by the *Piroplasma parvum* there is no hæmoglobinuria; it is not transmitted by even massive inoculations of blood containing parasites in practically every corpuscle. Animals that recover are immune, but the organism is not present in the blood. Ticks sucking the blood of such immune animals do not transmit the disease to non-immune animals. Transplantation of portions of the spleen into the abdominal cavity of cattle is said to produce East Coast Fever. The disease differs, therefore, very markedly from ordinary piroplasmosis. There is some reason to believe that the organism is not a piroplasm, and recently a new class has been created for it, and it has been

named the *Theileria parva*, after Dr. Theiler, the Veterinary Bacteriologist in the Transvaal.

In some cases of East Coast Fever hæmoglobinuria was observed, but it was found that there was also an infection by the *Piroplasma bigeminum*, and to the ravages of this parasite the "red water" was due, but in pure uncomplicated infections there is no "red water." This may also be the explanation of the success attending injections of blood from cases of tropical piroplasmosis, which Theiler believes is due to the same cause as East Coast Fever. In South Africa, also, there is another piroplasm—the *P. mutans*—which may complicate cases of ordinary piroplasmosis as well as East Coast Fever. An interesting point has been discovered which is of value for diagnostic purposes of East Coast Fever, and that is that splenic punctures afford material upon which a diagnosis may be based. In smears made from the spleen and stained by any modification of the Romanowsky stain, preferably by the Giemsa solution, round bodies the size of a lymphocyte or larger, of a light blue colour, containing red granules, are to be found. These bodies, known as Koch's bodies or granules, are claimed to be specific for East Coast Fever. It is not known what these are, but they are not unlike erythrocytes showing polychromasia, though the granules observed react differently from the granules found in red blood corpuscles in other piroplasmoses.

The Organism.—The piroplasmata are intra-corpuscular parasites, and may be demonstrated in films fixed and stained in the usual way. It is advisable not to use heat in any stage of the staining process. A thin film should be made and rapidly dried in the air by waving it about. The film is then fixed by methylic alcohol, though absolute alcohol or even methylated spirit will do. The spirit, after five minutes, is washed off and Giemsa's solution 1-10 applied for ten minutes or a quarter of an hour. The stain is run off, the film well washed in water, the water blown off, and

the film dried by waving in the air. When dry it may be examined at once by placing a drop of cedar wood oil upon the film and turning on the oil immersion lens. Leishman's stain fixes and stains at the same time, and it is a most useful reagent. After the alcoholic solution of the dye has acted for a minute or two double the amount of water is added to the stain on the slide and mixed, allowed to act for ten minutes or longer, washed off with water under the tap or from a wash bottle, the remnant water blown off, and the film rapidly dried in the air. No heat should be used in any stage of the staining process. In my hands neither Wright's nor Jenner's stain is nearly so good as either Leishman or Giemsa.

A variable number of corpuscles is infected. Sometimes it is necessary to search the edge of the film, where they may be found even if few in number. In severe cases at the height of the fever many corpuscles may be found infected and containing parasites in the ring or link form or as pear-shaped organisms joined by one extremity or free. The *Piroplasma bigeminum* is 3.5μ long by 1.2μ thick at broadest part. In some cases several may be found in a single corpuscle, eight or more in canine piroplasmosis, four like a cross or rosette in equine piroplasmosis. In other corpuscles modifications of the ring-shaped or pear-shaped organisms may be encountered. The organism is stained (by Leishman's stain) blue, and at one place is a dot-like object, the nucleus which stains ruby red. The red granule is at the broad end of the pear, but Lüke describes another much smaller at the pointed narrow end. The blue stain is deeper tinted on the edge of the parasite, the centre being paler in tint or even unstained. The Giemsa stain renders the parasites more conspicuous as it colours them more deeply. Many free parasites may be found both ring-shaped and pear-shaped: the pear-shaped forms may still be joined or free. The parasites may leave the corpuscle, or more frequently the cor-

puscle degenerates and disappears, or may be seen as a ghost, the reaction to the eosin of the dye having gone. The free parasites seek a new corpuscle, enter it, and begin the course of schizogony. The pear-shaped parasite on entering a corpuscle becomes rounded and amœboid. Two small processes project from the parasite, each receiving a moiety of the nucleus. The processes increase in size at the expense of the ring-shaped parasite, and soon it appears as if divided into two, each with its ruby-red stained nucleus. The young spores or merozoites remain attached by an attenuated extremity for some time. They look like twin pears on a common stalk, but later this union disappears, and two free pear-shaped organisms are found. This appearance of twin pears suggested the name of the parasite—the *Piroplasma bigeminum*. The appearances in piroplasmosis generally are as I have described, but there may of course be variations—irregular forms as well as vagaries induced by multiple infections.

When infection is passing off it is not unusual to find red blood corpuscles containing numerous fine granules staining with the basic dye, and these corpuscles and their contents are sufficient for diagnostic purposes. These granules are due to fragmentation of the parasite, or to liberation of granular matter from the parasite. I have seen cells containing what appears to be a degenerating parasite having numerous blue granules scattered through the body of the cell, and directly traceable to the parasite.

Some observers have described a flagellum as occasionally being present attached to the parasite. The process is not a flagellum, but, as Minchin suggests, a pseudopodium. It stains, like the body of the parasite, blue, and terminates in a knob or bulbous structure. Parasites showing these pseudopodia are not common, and those I have seen are within the corpuscles.

There is no pigment formed by the piroplasmata, and in this they differ altogether from the organisms producing malaria.

The presence of the parasites in the red corpuscles causes great corpuscular destruction, and the liberated hæmoglobin is excreted through the kidneys, colouring the urine. The colour may be merely dark brown to red, dark red to black, even porter like. There is also abundance of albumen in the urine. This albumen is probably the result of a lesion of the glomeruli of the kidney.

The after-effects of piroplasmosis are those of anæmia, more or less profound. There is sometimes poikilocytosis and anisocytosis. The latter condition is particularly striking and of value in diagnosis, as it persists for some time after all the parasites have disappeared from the blood.

The piroplasmata, though generally resembling each other in appearance, are not all of the same size, and this difference in size is inherent to the parasite and not the result of artefacts. This is proved by the fact that *P. bigeminum* and *P. mutans* may be identified in the same animal.

There is little doubt that the common cause of piroplasmosis in Ireland is different from the ordinary classical *P. bigeminum*, and I am of opinion that there are at least two different forms of piroplasmata affecting cattle in Ireland. I have seen organisms indistinguishable from the typical *P. bigeminum* and others that are much smaller and differ considerably in appearance from the bigeminum. In my experience, also, this second parasite is much more common than the former parasite.

I would direct the attention of those present to examine the slides from native cases of piroplasmosis and to compare the parasites observed in the corpuscles with those of the experimental cases.

Piroplasmosis is not only common in tropical and sub-tropical countries, but it is very prevalent in temperate climates all over the world. It is the so-called Texas Fever of America, and Red Water wherever it is met with.

Naturally, the disease is transmitted by the tick, no matter whether it is the piroplasmosis of the horse, ox, sheep, or dog. The virus may pass from the mother tick through her eggs to the young ticks developing from the eggs. These young ticks may transmit the disease during their larval or nymphal stage, or only when they become adult. The virus may be transmitted by the young tick, which has been infected as a larva, in the nymphal stage, or in the adult stage when it has been infected as a nymph. The information we have as to the rôle of the tick as a transmitter of the virus of piroplasmosis reads like a romance, and is a monument to the incredible industry and application of the workers in the field. There still remains, however, a hiatus to be filled in by the discovery of the life of the parasite in the definitive host and the condition of the parasite as it leaves the tick to enter the intermediate host. The fact that the virus is present in the eggs produced by the mother tick that has fed on infective blood is particularly interesting.

Experimental Piroplasmosis.—In South Africa, and also in England, piroplasmosis has been produced by allowing infected ticks to suck the blood of non-immune cattle, and similarly canine piroplasmosis of South African origin has been produced at Cambridge by Nuttall and Graham Smith in dogs. Piroplasmosis has also been produced in cattle, sheep, dogs, and horses by inoculation of virulent blood into susceptible animals. But to confine ourselves to bovine piroplasmosis. All animals are not equally susceptible. Young animals—calves—possess at birth a high degree of immunity, and calves running with their mothers live and thrive though the older animals are suffering and dying from the disease. Both young and old have been exposed to the same infection and infecting agent, yet the young ones survive; the older are infected and may die. An animal born upon a farm where piroplasmosis is endemic, possessing a natural immunity, as all calves have, has

this natural and inborn immunity strengthened by the repeated inoculations of infected ticks. The immunity is thus rendered permanent an immunity which would have disappeared if it had not been established by repeated infections. It is the repeated attentions of the ticks which keep up the immunity of animals upon an infected field or farm. If an animal—though born with a natural immunity, which sooner or later if not reinforced disappears lives upon a farm free from “red water,” and then is changed to a place where “red water” is prevalent, or where the ticks are infected, then, when it is attacked by the infected ticks, it sooner or later develops “red water.” It has lost the immunity it had, and succumbs to attack. It may, and frequently does, recover, but the blood is infective; it may set up the disease when inoculated into a susceptible animal, and the ticks drawing the blood become infected. The fact that animals are born with an immunity, and that this immunity may be prolonged indefinitely by mild infections, may be taken advantage of to immunise animals against the disease, although such a procedure would necessarily require all animals to be so protected because of the ticks. Animals immunised by injections of blood may have the immunity broken down in the field, due it may be to some other infection, or, perhaps, to infection by some other piroplasm than the one it is immunised against. The Africander ox is immune to “red water” of South Africa. Texas cattle, presumably immune to Texas Fever, when imported to South Africa may develop piroplasmosis. The same occurred with South American cattle. It appears that one form of piroplasmosis does not give immunity against invasion by a parasite different from that producing the original infection. That this is not always the case is possible.

When blood is injected into a susceptible animal after the lapse of an incubative period, which may be about six or seven days for *P. bigeminum* to twenty-one days for *P. mutans*, the temperature begins to rise.

Soon afterwards the parasites make their appearance in the blood, and if the piroplasmosis is associated with hæmoglobinuria the urine becomes darker in colour and contains albumen. The parasites increase in numbers, so that a large percentage of corpuscles contain parasites. Many red corpuscles are destroyed, the urine becomes still darker until it may be the colour of porter. The infection may be so severe that death results, or the infection passes off, the temperature falls, the parasites become fewer in the blood, the urine returns to its normal colour and condition. The animal has lost some condition, and may show this loss for some time. There are indications of anæmia with changes in the red blood corpuscles as previously noticed.

With respect to the piroplasmosis in this country I have on several occasions injected large quantities of blood into animals without any result. I have used not only blood obtained on the farm and conveyed to the laboratory, but I have got the patient to the laboratory and without delay injected the undefibrinated blood into the veins of cattle. I have used also emulsions of the spleen where numerous piroplasmata could be readily demonstrated, but without success. In some instances a few piroplasmata could be found in the inoculated cattle a few days after, but there was no temperature reaction, no "red water." An example may suffice. A cow naturally infected was obtained, and after examination of her blood, which contained numerous piroplasms, her jugular vein was tapped, and 100 c.c. of blood were withdrawn. 20 c.c. of the blood were injected subcutaneously into a heifer, and 20 c.c. into a bullock. The animals had been in the house for seven months. 20 c.c. of blood were injected into the jugular vein of an aged cow. The animals were kept under close supervision, and the temperature was taken twice a day from the date of inoculation—May 28th, 1909, to July 13th in the case of the heifer and cow. The bullock was killed on July 8th, as it was

suffering from Johnes's disease experimentally produced. The highest temperature registered for the cow was 103.4° on the evening of June 13th, for the heifer 103.2° on June 8th, for the bullock 103.6° on June 8th. The temperature of the cow on the evening of May 28th was 101.8° , of the heifer 101.7° , of the bullock 103.0° . I do not consider there was any temperature reaction in these animals. There was never any "red water." A few parasites exceedingly few were seen in the cow on June 4th, 6th, and 7th; in the heifer on June 2nd, 4th, 6th, and 9th; in the bullock on June 2nd, and doubtfully on June 4th. Apparently there was only a slight proliferation of piroplasmata, and there was no infection to cause even transient fever. There was no blood destruction or liberation of hæmoglobin.

On Nov. 8th, 1909, the heifer of the previous experiment was tapped, and 200 c.c. of blood injected directly into the jugular vein of an old red cow; 50 c.c. were injected into the jugular vein of a Kerry cow. Neither cow gave any temperature reaction, no hæmoglobinuria. The blood did not give any immunity to the red cow, as a later experiment will reveal, and the blood obtained from the heifer which, if she had a reaction when injected on May 28th, 1909, did not prove to be infective. It will be remembered that animals that have been infected and recover in certain forms of piroplasmosis, still have infective blood—blood capable of producing infection and symptoms in non-immune cattle. The heifer's blood was not infective; nor was the red cow immune to the *P. bigeminum*. Whilst the red cow was under observation after the inoculation the blood was occasionally drawn and examined for parasites. None could be found, and a quantity in bulk was centrifugalised, but the plasma was not tinted with hæmoglobin.

On Feb. 1st, 1910, I obtained blood containing an active virus and injected 20 c.c. into the jugular vein of each of four animals—a black heifer, a red-pollled heifer,

the roan heifer of the previous experiment of May 28th, and the black Kerry cow. The polled heifer, the roan heifer, and the Kerry cow did not react, and we may dismiss them.

The black heifer's record is as follows:—

Temperature at time of inoculation, 101.0° F. (On 29th of July she was injected with the washings of a clot of blood drawn from a case of piroplasmosis, but she did not react.) Her temperature on the following days reads as follows Feb. 2, 102.2°; Feb. 3, 102.2°, 102.2°; Feb. 4, 102.2°; Feb. 5, 101.2°, 101.8°; Feb. 6, 101.4°, 101.2°; Feb. 7, 102.4°, 101.0°; Feb. 8, 101.6°, 101.2°; Feb. 9, 105.2°, 104.0°; Feb. 10, 105.8°, 106.0°; Feb. 11, 105.4°, 105.4°; Feb. 12, 101.0°, 101.0°; Feb. 13, 101.4°, 102.0°. A distinct temperature reaction on Feb. 9th. Piroplasms were found in the blood films even outside the corpuscles in the plasma. On this date there was no hæmoglobinuria and no albumen in the morning, but it was found in the urine in the evening. Next afternoon the urine became dark red; it was albuminous. On Feb. 11th it was black in the morning, but in the evening it was nearly normal in appearance. Next day it was quite normal in appearance, and has remained so ever since.

Numerous piroplasms were present in the blood, but they were very few on Feb. 13, 1910, and disappeared altogether from the films during the next few days (Feb. 15th).^a

The animal had a typical attack of piroplasmosis, a temperature reaction, piroplasms in abundance in the blood, hæmoglobinuria. During the morning of Feb. 10th, her temperature being 105.8°, I tapped the jugular and withdrew into citrated normal saline about 10 c.c. of blood. The citrated blood in all equalled 20 c.c., and this I injected into the jugular vein of the old red cow

^a Since the above was written the blood examinations have been continued daily, and single piroplasms or pairs of piroplasms have occasionally been seen in the films, March 4, 5, 6, 7, 8, 1910.

mentioned previously with the following result. Temperature at time of inoculation:—

12 noon, Feb. 10	101.0°	-	Evening,	103.2°
Morning „ 11	100.6°	-	-	101.0°
„ „ 12	104.4°	-	-	103.0°
			6 p.m.	9 p.m.
„ „ 13	107.4°	-	-	107.0° 107.0°
„ „ 14	99.0°	-	-	Died 4 30 p.m.

On Feb. 12th piroplasmata (numerous) were present in the blood. On the 13th the urine was black, and many piroplasms were present. They were also numerous on the 14th, when the animal was evidently moribund. I injected into the jugular vein, with very little hope I admit, and with little or no expectation of any good result, 140 c.c. of 1 per cent. solution of trypan blue—a remedy advocated for the treatment of piroplasmosis.

The reaction in this case was prompt, very early in fact, and very severe. As will be seen from the preparations, the infection is very remarkable, a very large percentage of corpuscles being infected with typical piroplasmata of the type *P. bigeminum*.

A *post-mortem* examination was made immediately after death and smears obtained from the spleen, kidneys, heart, and red marrow. The spleen was found somewhat enlarged and fairly firm. In some cases it is much increased in size and diffiuent. The liver was slightly icteric. The kidneys very dark brown in colour. The other organs were normal. A hypophrenic abscess, of no connection, of course, with the infection, was also found. Sections of the kidney were made and examined, but, with the exception of some cloudy swelling and hyaline casts in the tubules and a certain amount of vascular congestion, there was nothing of importance. Films from the kidneys and heart did not show, as is usually maintained, an excessive number of piroplasms: they were not numerous in either spleen, heart, or bone marrow. The latter appeared normal, perhaps rather more erythroblasts than usual. In the spleen active

phagocytosis of red corpuscles by huge macrophages was evident, and though a few of the corpuscles phagocytosed contained piroplasms the majority were free from infection.

The experiments are being continued, and I hope when some tangible results as regards immunisation have been attained that I may be allowed to communicate them to the Section.

The microscopic films exhibited included specimens showing the organisms present in the blood of:—

- (a) Experimental cases.
- (b) Naturally infected animals of Ireland.
- (c) Horse's blood (*P. equi*).
- (d) Ox's blood (*P. mutans*).
- (e) Ox's blood, East Coast Fever (*P. parvum*).
- (f) Koch's granules in splenic smears from East Coast Fever cases.

“ THE TUBERCULINS AND THEIR USES AS DIAGNOSTIC AND
CURATIVE AGENTS.”

MESSRS. ALLEN & HANBURY'S, LTD., London, have issued an instructive pamphlet with the above heading. In order to meet the convenience of the medical profession and to facilitate the diagnosis and treatment of tuberculosis, they prepare separate doses of the various tuberculins, put up in the most convenient form for immediate use. Each dose of the required strength is enclosed in a sealed Jena-glass capsule, sterile and ready for use. This capsule is known as an “ azoule ”—the word being the trade-mark of the firm intended to denote their preparations of tuberculin. The pamphlet contains a brief, but clear, account of tuberculin as a curative agent—the chief forms described being Koch's “ New ” Tuberculin T.R., “ New ” Tuberculin T.R. (Bovine), and “ New ” Tuberculin B.E. The last-named is an emulsion of the powdered bodies of tubercle bacilli in distilled water with 50 per cent. of glycerin. The emulsion, after subsidence, is standardised to 5 milligrammes of dried tubercle bacilli per one c.c., and is then bottled for use.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Urgent Surgery. By FÉLIX LEJARS, Professor Agrégé à la Faculté de Médecine de Paris. (Chirurgie) Chirurgien de l'Hôpital Saint-Antoine, Membre de la Société de Chirurgie. Translated from the Sixth French Edition by WILLIAM S. DICKIE, F.R.C.S.; Surgeon North Riding Infirmary, Middlesbrough; Consulting Surgeon Middlesbrough Union Infirmary; Consulting Surgeon Egton Hospital. With 20 full-page Plates and 994 Illustrations, of which 602 are drawn by Dr. E. Daleine and A. Leuba, and 217 are from original photographs. Vol. I. Introductory—Head, Neck, Chest, Spine, Abdomen. Bristol: John Wright & Sons, Ltd. 1909. Pp. 617 + xiv.

THE author tells us in his preface that the surgical spirit belongs to all times; in all ages conscientious and energetic men have rebelled against the theory of *laissez faire* and *laissez mourir*. That is the spirit which permeates this volume. As the author points out, urgent surgery is not merely the surgery of injuries, as at present numbers of clinical conditions demand immediate surgical interference if the unfortunate sufferers are to be given the best chance, and, indeed, in many cases the only hope of recovery.

To anyone who reads over the volume before us it becomes at once obvious that the author is an eminently sound, practical surgeon. The statements one reads in almost every page are clearly the result of sound reasoning on the part of one who has had an extensive practical experience and who has divested himself of the theories, the errors, and, indeed, as the author himself says, the empiricisms of former days. The first section is devoted to the consideration of the equipment and the urgent operation the case of extreme urgency with

complete lack of necessities—anæsthesia, saline infusion, and venesection.

Section II. is devoted to the head, beginning with fractures of the skull and terminating with mastoid suppuration and intracranial abscess following upon suppurative otitis media.

In this section there is but one point in connection with which we would be inclined to differ from the views put forth by the author—it is that devoted to the treatment of fractures of the base of the skull. The author tells us the most common cause of death in basal fractures is infective meningoencephalitis, and that the practical conclusion to be drawn from that is to treat those cases by antiseptic and aseptic methods applied to the paths along which the infection travels into the meninges. We think, however, that a not inconsiderable number of deaths from basal fractures arise from the cerebral compression produced by the accompanying extravasation of blood, and that we have an equally clear practical conclusion to be drawn therefrom—viz., the relief of that pressure. The author does refer to lumbar puncture as a method of treatment which may sometimes be resorted to in order to temporarily relieve coma and headache, but we are strongly of opinion that no case of fracture of the base of the skull should ever be allowed to die from pressure of extravasated blood without being given the chance of recovery by relieving that pressure more thoroughly than can be done by lumbar puncture, excellent though it is as a temporary measure.

The method of relief we refer to is that of a decompression trephining operation on one or both sides of the skull, suggested originally by Harvey Cushing, of Baltimore, and known as the intermusculo-subtemporal decompression operation.

In Section III. the author discusses the treatment of wounds of the neck, fractures of the larynx and trachea, foreign bodies in the air passages, tracheotomy and intubation of the larynx, and foreign bodies in the pharynx and œsophagus.

Section IV., on the thorax, is an excellent section,

especially that portion in connection with which surgeons in this country have little or no experience whatever—viz., wounds of the heart and their treatment by suture. Indeed, surgeons here have but little experience of the treatment of extensive wounds of the lung. The advice contained in this section in respect to these conditions, in our judgment, is eminently sound and practical. The author's treatment of empyema leaves nothing to be desired.

In Section V. injuries of the spine and their treatment are discussed: but though the various methods of treatment of fracture-dislocation are fully described, such as continuous-extension, and counter-extension, cervico-axillary suspension and laminectomy, the author does not really make any very definite pronouncement upon the vexed question as to the advisableness of performing laminectomy in every case of fracture-dislocation of the vertebral body, unless the following may be said to be a decided opinion on that point:—"The inadequacy of these methods (continuous-extension and cervico-axillary suspension), still more of simple immobilisation and the usual unfortunate outcome of these vertebral injuries, are the three most powerful arguments in favour of *immediate operative intervention*." The next sentence, however, leaves, or is likely to leave, the general practitioner or junior surgeon looking for help in a more or less nebulous state as to what he should advise or do:—"The operation cannot be considered an easy one, and, further, the results which have been obtained up to the present time are by no means convincing."

Of course no one could have any doubt as to what should be done in a case of fracture of the posterior arch with depression any more than in a case of depressed fracture of the vertex of the skull.

The last section, No. VI., on the abdomen, consists of over 300 pages, and it is replete in every respect with good, practical advice. Under the heading "Serious Hæmorrhage from Ulcers of the Stomach and Duodenum," the author discusses the question of treatment in an able manner, yet we are not quite in accord with the

general tone of his remarks, which tend on the whole to discourage the question of surgical interference. The last paragraph of his summary is more in accord with our own views on this subject. Speaking of a first hæmatemesis, he says "Do not lose confidence, keep the patient on his back in bed," &c., &c. Then he continues:—"Be ready to operate if the bleeding recurs in the same quantity as before, or, if the bleedings, although less, are repeated on several occasions, are associated with fever, and rapidly produce a progressive and dangerous degree of anæmia." "Do not forget," he says, "that the very grave prognosis of these operations depends to a large degree on the late date at which they are undertaken and on the incurable anæmia of the patients."

The junior surgeon and general practitioner will derive much benefit from a careful study of this entire section, and especially that portion devoted to the discussion of the treatment of appendicitis.

We have said enough to show the nature of the work, the first volume of which alone is as yet published. It has given us genuine pleasure to read through it, and we can truthfully state that no more eminently practical and thoroughly sound work exists in connection with the treatment of the emergencies of surgery.

We congratulate the author on the great success which his work has attained. It has been already translated into six languages from the original, and now we have it in English. After such testimony it would be a work of supererogation for us to say more. Our thanks are due to the translator for giving us so splendid a work.

The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Volume X., for 1909. Nervous and Mental Diseases. Edited by HUGH PATRICK, M.D., and CHARLES L. MIX, A.M., M.D. Chicago: The Year-Book Publishers.

THIS is the tenth volume for the year 1909 of the American Year-Book Publishers, and deals almost entirely with nervous diseases—the consideration of mental

diseases proper occupying the smallest portion of the letterpress. The book is of value as recording many instructive and curious nerve and brain lesions, and is of much clinical interest. The description of brain, cord, and cerebellar lesions will well repay perusal by both physicians and surgeons, whilst all those interested in the prevailing controversies as regards aphasia and anarthria will be glad to have such a concise and clear epitome of the views of Pierre, Marie, Wernicke, and others set before them. The subject of brain syphilis and syphilis of the spinal cord is of particular interest to us owing to the work of Mott, and the diagnostic methods employed in the differentiation of brain and nerve syphilis from other nervous lesions are admirably and concisely given.

The book is one of reference, but the Editors have, in a very small space, given an admirable *résumé* of the year's work, and anyone referring to the pages of this volume cannot but be placed *au courant* with present-day ideas upon advanced cerebral medicine and surgery, and more particularly from their clinical aspect.

The question of operative treatment in cases of dementia præcox is of interest to alienists in this country, in which, so far, no confirmatory cases have been recorded as to the value of the removal of a suppositiously diseased thyroid gland where the operation has not been undertaken. Berkley has recorded eight cases of removal of the thyroid in this most distressing disease, with a recovery rate of five. It is well, however, in estimating the value of this operative method to remember that many of these adolescent cases have shown rapid recoveries and subsequent relapses during the course of their disease. The fact, however, is evident enough that in the fuller knowledge of the character and quality of the thyroid secretion we may have many solutions of unknown facts regarding morbid mentalisation in this as in other forms of insanity. Where the administration of the thyroid extract produces such marked beneficial results in cretinism and post-maniacal and melancholic stuporose states it can readily

be assumed that a vitiated secretion of the gland would profoundly affect normal mentalisation. It will require more definite knowledge of the physiological and chemical action of thyroid secretion upon metabolism and mentalisation before operative treatment will be generally justifiable in these cases, however much we desire a means of rescuing the *démence précoce* from this terminal dementia.

The record of operative treatment, however, in America is of great interest as recorded in the work under review. and if established and confirmed by other workers will place partial thyroidectomy as a recognised treatment in cases of the katatonic type of dementia præcox in the future. The specific nature of general paralysis and ataxy is strongly insisted upon, and the value of the Wassermann reaction as a diagnostic means is mentioned. Among 23 general paralytics Lesser and Michaelis found 21 positive reactions. There is nothing further of interest in connection with the subject of general paralysis of the insane. We have ourselves had a case of over twelve years' duration under our own care, and the duration of life is often much longer than the three years generally allotted by alienists as the span of life to the general paralytic.

This tenth volume of the series for 1909 is well and beautifully illustrated, and the pictures of cerebral lesions are excellent. The full length illustrations of patients suffering from Paget's disease, mid-brain lesion (the Weber-syndrome), together with radiographs showing the appearances of the diseased and normal Sella Turcica, ought to be of interest to surgeons and X-ray workers.

R. R. L.

Spiritualism and Insanity. By DR. C. WILLIAMS.
London: The Ambrose Co. No date. Demy 8vo.
Pp. 53.

WE have read Dr. C. Williams's essay, "Spiritualism and Insanity," with interest. He describes very forcibly the disastrous consequences which often result from pursuing the study of Spiritualism.

The lessening of the will power which naturally follows

the attainment of "will passivity" is exemplified to us by his own experience, as for years he gave much of his time to spiritualistic studies, and feels that although a long period of time has elapsed since he severed his connection with the movement his will power "has never recovered its former force and energy."

The numerous cases of insanity which he alleges to have occurred while he was identified with, and acting as president of, a spiritualistic society ought to be a grave warning and a sufficient deterrent to even "dabblers" in the subject. Dr. Williams's theories as to the demoniacal cure and possession of mediums, and in particular, his description of "a developing circle" are most interesting, and we trust his book will gain the wide circulation it deserves amongst neurotic persons, who are especially liable to mental breakdown from an unhealthy interest in "spooks" and "spook-hunters."

Syphilis. By SIR JONATHAN HUTCHINSON, F.R.S., LL.D., F.R.C.S.; Consulting Surgeon to the London Hospital, and to the Royal Ophthalmic Hospital; sometime President of the Royal College of Surgeons. New and Enlarged Edition. With twelve coloured and twenty-four black-and-white Plates. London, New York, Toronto, and Melbourne: Cassell & Company, Ltd. MCMIX. Cr. 8vo. Pp. xxiv + 583.

WE welcome this new and enlarged edition of Sir Jonathan Hutchinson's work on "*Syphilis*." We congratulate the author on its publication. It is unique in the annals of medical bibliography for a text-book to be produced by an eminent authority who can claim sixty odd years special experience in his subject. We cannot remember the time when the name of Hutchinson was not associated with syphilography. Were reviews written solely with the object of recommending books to our readers' notice, the task in the present instance would indeed be easy. The announcement "*Hutchinson's Syphilis, New Edition*," though terse, would in itself contain the necessary incentive to assure its complete

success. However, as such is not the purpose of reviews, but merely an agreeable duty to be performed when feasible, we must refer at greater length to some of the characteristic features contained in the book. Hutchinson entered the profession in 1849, becoming a licentiate of the Society of Apothecaries of London. Possibly in consequence of the extensive wars carried on during the first sixty years of the last century, including the Peninsular, Kaffir, Crimea, and the Indian Mutiny, many volumes were published on syphilis. In our own city Carmichael, Wallace, Colles and Egan led the way, followed by Ricord in Paris, and Acton, with several others, in London. All the text-books of this period contained lengthy and important treatises. Discussions raged as to the plurality of venereal poisons, as to the use or disuse of mercury, as to the classification of sores, &c., &c. Gonorrhœa was finally recognised as being a local and distinct venereal disease.

Hutchinson at an early date published his observations on syphilitic affections of the eyes and teeth, which attracted so much notice that he was compelled, as it were, to become a specialist on the subject. The knowledge he has obtained during sixty years' study of syphilis in so vast a population as that of London has enabled him to write a book which for its clinical value is unequalled by any other work on the subject with which we are acquainted. As he somewhat naïvely puts it—"My own years having been unusually prolonged, in association with fair powers of memory and mental vigour, I have been able to secure a kind of experience which falls to the lot of but few. I have seen many of those whom in their early adult vigour I had treated for syphilis, now in honoured grey hairs, and apt to boast of their grandchildren." Alfred Fournier is one of the few to whose lot similar experiences will have fallen, and with exquisite good taste Hutchinson dedicates his work to his contemporary.

We have already stated that for a wealth of clinical data no book on syphilis surpasses that of Sir Jonathan Hutchinson's. In this respect it is of inestimable value,

and we earnestly wish—in fact we are particularly anxious—that nothing we may now add will detract from this statement.

The book before us may be described as consisting exclusively of its author's own particular teachings, though he refers briefly to those of others. Syphilologists will regard this as a commendable feature, and will appreciate their exemption from reading a compilation of theories with which they are already acquainted. We have to remember, however, that the general practitioner may be unduly prejudiced against all other alternative methods of treatment in consequence of the too cursory manner in which so distinguished an author refers to them. Nor can we pretend to approve the means he adopts in order to prove the advantage of his methods of treatment over all other procedures. The same is true of all controversial topics with which he deals. He asserts his premises as though they were accepted facts, whereas a number—if not the majority—of experts would be of a diametrically opposite opinion. We will include in this review an example of what we allude to.

At other times he writes in a plausible and suggestive tone, as in the following case:—“In order to avoid the appearance of partiality it may be as well to allow the advocates of these methods, as far as possible, to make their own disclosures.” Then he enumerates the most disastrous accidents that have from time to time occurred when mercury was administered by inunction or injection methods. All we can say is that the evils he mentions no longer result, and at no time have we ever observed anything more closely resembling them than small nodosities following injections of mercury, and these were never so inconvenient as to prevent the patient following his ordinary vocation. Even nodosities rarely or never occur now-a-days in consequence of improved methods in technique and in the preparation of the drugs used. Having invited the confidence of the reader by his expressed desire not to seem partial, it is, we think, a pity that he neglected to state the period, technique, and preparations used when the majority of the accidents he mentions

occurred. There is a vast difference between the preparations used to-day for intramuscular injections and those originally employed. When compiling the effects of mercurial injections he would have avoided the appearance of being biased had he really allowed the advocates of these methods "to make their own disclosures." Surely the method advocated by the Army Medical Service is worthy of particular mention, and also some reference to Colonel Lambkin's work might have been made. For instance, he could have included in his text that Lambkin had made some 36,000 intramuscular injections without a solitary sequela of the dire nature of those mentioned by the author of the book before us. Personally, we are not in favour of using intramuscular injections of mercury as a routine course, but we believe that such treatment occupies a useful place amongst our alternatives.

One of the many advantages to be obtained by reading Sir Jonatban Hutchinson's book is that his knowledge of syphilis extends back to that time when the light of modern research began to glimmer through the darkness of previous ages, and it had not developed to such an extent but that the older ideas still prevailed, and only the few perceived it clearly. We imagine that whatever instruction Hutchinson received during his curriculum would have described the new teaching as an innovation yet to be authenticated. We believe that a great deal of useful information and inspiration may be obtained by studying the old masters, and Hutchinson's volume is a connecting link with the past. Some of his most suggestive doctrines probably take their origin from his early training. A comparison of some of his writings with those of his predecessors is, in this respect, full of interest. Even their terminology is frequently the same, and, as everyone knows, terms are merely the expression of theories or the names of recognised principles. The Old Masters and Hutchinson express their reasoning on the cause of venereal disease by the two words "Syphilitic virus," and they also sum up the effects of mercury by describing it as the antidote of syphilis. No apter descriptions could be conceived.

The similarity of their ideas are even more marked in other matters.

In writing on "Yaws," so far back as 1825, Carmichael wrote: "From the accounts we have of yaws, it seems to arise from a poison which holds a middle station between those of small-pox and syphilis. . . . The ulcers of the throat resemble those of syphilis, so that it is impossible to distinguish them, and the pustular eruption is so like that of small-pox that we are led to class it as the connecting link between syphilis and small-pox in the chain of contagious diseases." This is assuredly suggestive of the evolution of diseases. Hutchinson modernises the language embodying this idea. He states his views as follows:—"We may profitably remember that the protozoon which produces variola and vaccinia is possibly not distantly related to the spirillum of syphilis"; also, that Sydenham and Daniel Turner anticipated "his own recent statement that yaws was probably the parent form of European syphilis." Continuing, he adds:—"As we now know that the protozoon parasite of syphilis is also present in yaws, the confusion disappears." He includes this latter statement in his arguments that yaws is a modified syphilis; and we would digress here to say that the statement "as we now know" is an unjustifiable conclusion, one which, in all probability, is as inaccurate in fact as in the assumption. Many bacteriologists "do not know" what Hutchinson so definitely informs his readers "we now know." This is the example which we stated in the commencement of our review we would give of his manner in asserting premises not generally accepted as proven. Though the morphological characteristics peculiar to Chaudin's spirillum of syphilis and Castellani's spirillum of yaws are so alike that some fail to recognise any difference between them, yet such authorities as Blanchard, Mesnil, Prowazek, and Martin observe minute distinctions; and even though these organisms so resemble each other morphologically they can be distinguished as belonging to different species biologically. The bacillus of leprosy resembles that of pulmonary

phthisis, and yet we do not consider these diseases to be the same, no matter how modified by environment, climate, race, &c. Again, we find a further parallel between the writings of Egan in 1853 and those of Hutchinson. Egan asks: "What is syphilis? What are its symptoms? Thus, for example, one class of writers describe all the forms and varieties of the disease as modifications of one specific virus, the different phases having been eliminated by peculiarity of constitution, mode of living, climate, treatment, &c." And Hutchinson writes: "The parasite itself, although essentially the same all over the world, is no doubt susceptible to some modifications by climate and food, and differs in minor characters in different countries and races. Probably the majority of widely separated countries and widely dissimilar races have their own variants of syphilis, as would be seen if the facts were carefully observed." . . . "That the affections which have been known under the names sibiens, morula, pian, button-scurvy, yaws, parangi, &c., are variants of syphilis and not specifically distinct from it." We regard these comparisons with interest; they not only indicate how far one's ripe experience, knowledge, and deductions may have (through very many years) their origin in the information received in the early days of one's education, but also, indirectly, how the theory of Evolution may be applied to micro-organisms. Some years ago we expressed our opinion that the law of evolution pertains equally to microscopic and macroscopic organisms, that any difference between the two was the equivalent of the number of diameters in a lens, that theoretically what might be microscopic to a short-sighted individual would be macroscopic to a keen-sighted person. Nor is this strange, as even the very elements themselves are now known to be evolved forms of earlier atoms seen in nebulous matter. In fact, though we cannot artificially make elements evolve in our laboratories, we can at least make them devolute and retrace their steps to lower elements, such, for example, as the changing of gold through silver into lead.

It will be unnecessary to remind our readers of the confusion that existed in the classification of venereal diseases, and we supposed that it was now universally conceded that the presence of the diplococcus of Neisser, the bacillus of Ducrey, and the spirochæte of Chaudin, was sufficient to determine the diagnosis, that their recognition was, in fact, pathognomonic. And that in common with other diseases complications and mixed infections might occur. We believed that as a case of pneumonia might pass into one of phthisis, either directly or after a greater or less interval of time, so might a soft sore take on the characteristics of a chancre or be followed by constitutional syphilis, and that these results would take place without effecting the ætiological factor in the production of either the pneumonia or soft sore. That is to say, that each disease was separate and distinct, but had accidentally, as it were, grafted upon its site the germs of a different malady. Hutchinson once more causes our minds to go back to the time when the precise nature of sores of a venereal nature were confused. He says: "Perhaps the most probable hypothesis as to the relationship of 'soft,' or non-indurated, sore, and the indurated one is that the specific virus (the spirochæta) is present in the initiation of both, but that the co-existence of other organisms which promptly cause inflammation often destroys the infected cells and prevent both specific induration and blood contamination. This would fit in well with the established fact that many sores which never show induration are yet productive of syphilis." And also:—"It is a plausible suggestion that not a few of the so-called soft chancres are really inoculations of the virus on those who have had the disease before." The significance of these remarks will be appreciated by syphilologists. Paternal transmission and transmission to the third and fourth generations are questions on which none are so qualified to offer an opinion as Sir Jonathan Hutchinson. His great experience furnishes him with illustrative cases, and he shows how easily errors might be made in collecting evidence for the elucidation of these questions.

We regret that we are unable to see eye to eye with the author's views, and also that we are unable to recommend this work to recently qualified men or young practitioners. It, however, affords us the sincerest gratification to reiterate the opinion previously expressed in the beginning of this review. We cordially recommend the book to experienced practitioners, and affirm that Hutchinson's "Syphilis" is a mine of clinical wealth for the expert syphilologist to explore.

S. S.

Guy's Hospital Reports. Vol. LXIII. Edited by F. J. STEWARD, M.S., and HERBERT FRENCH, M.D. London: J. & A. Churchill. 1909. 8vo. Pp. xxxvi + 387.

WE always look forward with pleasure to the appearance of "Guy's Hospital Reports," feeling sure that they will contain something of interest and of value. This year's volume is no exception to the rule, and we again offer our congratulations to all concerned on the extent and quality of the work turned out during the year. Each of the thirteen papers which comprise the report is of interest, but some of them naturally appeal more than others. A very complete study of Unilateral Exophthalmos is presented by Dr. Bergin. He divides the causes into nine groups, and discusses each of them in detail. Herbert French analyses the records of sixty-eight cases of pernicious anæmia, in continuation of the series previously reported. We are glad that he retains the term "pernicious," even while admitting that it is not always applicable. The use of a term that has become familiar does no harm to anyone, not even to the patients suffering from severe anæmia, and it obviates the necessity of introducing a new term with resulting confusion. The notes of each of the sixty-eight cases are summarised, but most readers will be satisfied with a perusal of Dr. French's comments. Another valuable paper is that by Nicholson on Kidney Tumours. The writer has made a careful microscopical study of a large number of tumours, and has brought to light several new points.

His remarks on tumours arising from developmental errors and on hypernephromata are extremely suggestive. It is to be regretted that the paper is not illustrated by micro-photographs. Hertz writes on the "Action of Saline Purgatives," a subject on which he has already communicated some of his results in his recent work on "Constipation." Macalister contributes a critical review of "The Pathology of Paroxysmal Hæmoglobinuria," in which he adduces confirmatory evidence of the truth of Eason's conclusions regarding the existence in the blood of a specific hæmatolytic agent in this disease: whilst amongst the other papers we may mention Fagge's "Study of Ten Cases of Brain Abscess," Hale White's remarks on the "Urine in Pulmonary Tuberculosis," and "A New Method of Estimating Lactic Acid in Urine," by Ryffel.

Atlas of External Diseases of the Eye for Physicians and Students. By DR. RICHARD GREEFF, Professor of Ophthalmology in the University of Berlin. Only authorised English Translation. By P. W. SHEDD, M.D. New York. With 84 Illustrations in Colour from Wax Models printed on 54 Plates with explanatory text. The illustrations are from models in the Pathoplastic Institute in Berlin. London: H. K. Lewis. 1910. Royal 8vo. Pp. viii + 140.

THIS handsome volume, which is dedicated to "My dear colleague, Dr. Theodore Axenfeld," is the result of years of work.

In conjunction with the sculptor, F. Kolbow, Dr. Greeff has endeavoured to perpetuate in wax models the appearance of important external diseases of the eye.

The plates were obtained by making, after a special method, a mask of the living subject, which was then filled with wax. From the wax models photographic reproductions in four colours were made.

We have never seen illustrations so life-like, both in modelling and colour. The letterpress explanatory of the plates is full and satisfactory as far as the infor-

mation it contains; but we find a want of care in the editing and some disregard of the King's English.

He speaks of a "general practitioner," meaning a general practitioner. The skin of the eyelid he describes as "the most tenuous and sensitive derm of the whole body." Again, "The patient develops great photophobia, and, because of the ocular trouble, have to be extremely careful of themselves." Again, "serious" is written where serous is intended; "obstipation" is used instead of constipation; "the trachoma granule does not, after existing for some time, return to a norm"; "the eye becomes practically blind, though able to cognise light," and so on. It reminds me forcibly of that clever paraphrase of "The Busy Bee"—

"How doth the parve assiduous ape
Carp quisque nitescent hore,
And college mel the total die
From quisque aperient flor—"

But these eccentricities are trifling, and can easily be curtailed in the next edition, whereas the sterling good quality of the illustrations remains and marks this Atlas as the most perfect of its kind that we have yet seen. We heartily congratulate Dr. Greeff upon his most successful accomplishment.

Surgical Diagnosis. By DANIEL W. EISENDRATH, A.B., M.D.; Professor of Surgery in the Medical Department of the University of Illinois (College of Physicians and Surgeons); Attending Surgeon to the Michael Reese and Cook County Hospitals, Chicago. Second Edition, thoroughly revised and enlarged, with 574 original Illustrations, 25 of them in colours. Philadelphia and London: W. B. Saunders Co. 1909. Pp. 885.

THE fact that a second edition of the work before us has been called for within the short space of two years justifies the good opinion we formed of the first edition in our review of it. The volume to hand has received careful revision from the author, notably the sections on cerebral localisation, the chapters on urinary diagnosis and acute abdominal conditions. Many new illustrations have been

added, and the work has been enlarged by over 100 pages. The book is one which we can strongly recommend to everyone interested in the problem of surgical diagnosis.

Remedial Gymnastics for Heart Affections used at Bad-Nauheim. Being a Translation of "Die Gymnastik der Herzleidenden." Von DR. JULIUS HOFMANN und DR. LUDWIG PÖHLMAN, Berlin und Bad-Nauheim. By J. G. GARSON, M.D. Edin.; Physician to the Sanatoria and Bad-Nauheim, Eversley, Hants. London: Swan Sonnenschein & Co. 1909. Demy Svo. Pp. xvi + 128.

WHATEVER opinion we may have regarding the use of graduated exercises in the treatment of cardiac disease there can be no doubt that Dr. Garson has done the profession in England a benefit by the publication of this work. It consists of a general discussion of the use, application, indications, and contraindications for remedial gymnastics in heart affections. This occupies about forty pages, and is followed by about eighty more pages consisting of photographs of the actual movements recommended, with explanatory notes. It is this latter part of the book that will be found most useful by those who wish to adopt a Nauheim treatment at home. Anyone who carefully studies the photographs should find himself, after practice, in a position to superintend with confidence the treatment of a patient by the means depicted. To those then, who desire to educate themselves in these methods we recommend the book. It is extremely nicely got up, and the translator has done his part well.

Philadelphia General Hospital Reports. Volume VII. 1908. Edited by HERMAN B. ALLYN, M.D. Philadelphia: Printed by Dunlap Printing Company. 1909. Svo. Pp. xii + 272.

THIS volume of Reports contains a wealth of information in its thirty articles. All of them are instructive, and the majority of them deal with pathological conditions

and clinical cases that are not uncommon in practice. One of the most interesting is that of Dr. A. A. Eshner—"Hypernephroma of the Kidney." A paper on Bright's disease from the clinician's point of view is a timely contribution to the recognition of the objective symptoms. Drs. Willson and Rosenberger write a thoughtful and suggestive article on the duration of the actively infectious stage of tuberculosis. Students of forensic medicine will find two interesting cases reported by Dr. B. M. Anspach, which will well repay reading.

The volume is a useful contribution to medicine, and creditably edited and published.

The Year-Book of the Scientific and Learned Societies of Great Britain and Ireland. A Record of the work done in Science, Literature and Art during the Session in 1908-1909 by numerous Societies and Government institutions. Compiled from official sources. Twenty-sixth Annual Issue. London: Charles Griffin & Company, Ltd. 1909. 8vo. Pp. viii + 356.

THE title of this valuable annual sufficiently indicates its scope and object, and its value to scientific workers can hardly be over-rated. Under the heading "Medicine" over fifty pages are occupied with the titles of papers read at the different societies. The mere recital of the names of the subjects dealt with by medical writers cannot be other than suggestive to medical writers. To those interested in the study of any specialty the annual will prove a rich mine of information.

Clinical Memoranda for General Practitioners. By ALEX. BRAND, M.D., C.M.; and ROBERT KEITH, M.D., C.M. London: Baillière, Tindall & Cox. 1909. 8vo. Pp. x + 207.

THIS little book is designed to be a help to the general practitioner, and especially to those who are beginning practice, and we have no doubt that it will be found interesting and instructive, not only by those for whom it is

primarily intended but by others also. The authors have gathered together notes and jottings, culled from their own practice and that of others, which cover a very wide field of medicine. Many and various are the subjects touched on, and though no one is very fully dealt with, yet all are illustrated by useful practical observations. There is, of course, little, if anything, in the book that is new, which is a characteristic of many more pretentious books, but the record by careful practitioners of the means that have been helpful to them in dealing with difficulties is always interesting, and often stimulating. It is in this way, indeed, that we think the book will be found most useful. It will stimulate the practitioner to think over his own experiences, and will often suggest to him alternative methods and new points of view which cannot fail to be helpful.

A Text-Book of Physiology. By WILLIAM H. HOWELL, Ph.D., M.A., LL.D. ; Professor of Physiology in the Johns Hopkins University, Baltimore. Third Edition. Philadelphia and London : W. B. Saunders Co. 1909. 8vo. Pp. 998.

THE first edition of this work was published in 1905, and was thrice reprinted before a second edition appeared in 1907. This latter in turn was twice reproduced before the third edition, now under review, appeared. These facts are in themselves eloquent testimony to the merits of Howell's text-book, which for its compass probably gives the best all-round exposition of physiology in the English language, or perhaps in any language. The book is useful not only to the student, but also to the busy man of practice, who may wish to consult a reliable, up-to-date, and readable account of advance in knowledge of the physiology of the organs of the human body. On its first appearance the work was reviewed in our columns. It may not be out of place to state, however, that it is arranged in the following nine sections :—(1) The Physiology of Muscle and Nerve—five chapters ; (2) the Central Nervous System—eight chapters ; (3) the Special Senses—eight chapters ; (4) Blood and Lymph—three chapters ; (5) the Organs of Circulation—nine chapters ; (6) Respiration—five chapters ; (7) Digestion and Secretion—

eight chapters; (8) Nutrition and Heat Regulation—five chapters; and (9) Reproduction—three chapters. An Appendix is added giving the new classification of proteins and an excellent account of diffusion and osmosis.

The articles on the heart-beat and the properties of heart muscle, on the gaseous interchange at the lungs, on physiological oxidations, and on the metabolism and excretion of the purin bodies are particularly good.

New matter is interpolated in almost every chapter, and always as the fruit of new methods of study. As the author states in the preface to this edition—"Good methods of investigation, whether physical, chemical or anatomical, have now, as formerly, an abundant opportunity of attaining results of the greatest importance." Amongst the changes and additions may be mentioned those in connection with the contraction of muscle and the beat of the heart as studied by the aid of the string galvanometer, the newer views on aphasia, some evidence of localisation of function in the cerebellum, the alkalinity of the blood, the subject of "opsonins," the coagulation of blood, the venous pulse, the effects of carbon dioxide in regulating the rhythm of respiration, the function of the spleen in preparing hæmoglobin, the unknown nitrogen of the urine, the excretion of creatinin, the physiology of the thymus and of the pituitary body, the protein requirements of the dietary, and lastly, the subjects of growth, senescence, heredity, and the determination of sex.

The Practical Medicine Series, comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the general editorial charge of GUSTAVUS P. HEAD, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume IX. Skin and Venereal Diseases. Miscellaneous Topics. Edited by W. L. BAUM, M.D.; HAROLD N. MOYER, M.D. Series 1909. Chicago: The Year-Book Publishers. Glasgow: G. Gillies & Co., sole agents for the United Kingdom. Crown 8vo. Pp. 240.

THE book we have to consider is the ninth volume for 1909 of the Practical Medicine Series, and is entitled "Skin and Venereal Diseases—Miscellaneous." It is published annually,

and consists of a collection of interesting extracts taken from the medical journals of different nations. The editors of this volume consulted some fifty-four distinct publications in compiling the 173 references which constitute their work.

The book is divided into two departments. The first section is edited by W. L. Baum, M.D., Professor of Skin and Venereal Diseases, Chicago Post-Graduate Medical School. It is devoted to those conditions which are associated with Professor Baum's name.

An account of Dr. Gottwald Schwarz's experiments on desensitising the skin to X-rays. Dr. Schwarz reduces the metabolism of the parts by pressure. He placed two capsules containing radium side by side on the skin, one lying loosely, the other held firmly by means of a rubber band. The differences between the resulting dermatitides was striking. Where the pressure was employed a slight blush appeared after some days, disappearing in three or four days, whereas where there was no pressure a severe dermatitis occurred and lasted for more than a month. The same effect was produced by the X-rays, the rays being applied through thin blocks of wood.

We note that leprosy is apparently on the increase in the United States. In 1908 it is reported that there were 278 cases. Of these 73 per cent. were at large, 145 were born in America; six it is stated come from Ireland and three from England; the remainder from various other places. In the reports of the International Leprosy Congress of Berlin in 1897 there were stated to be only about 200 lepers in the United States. Such an increase of leprosy in ten years is worthy of attention. So far as these Islands are concerned, we understand that the last case of leprosy died in Shetland at the end of the eighteenth century (*Encyclopædia Medica*).

A new method of administering mercury is also reported in the volume before us. Erasmus Darwin, in his work on "Zoonomia," published in 1803, mentioned clysters of mercury being used at that time. Some advantages might be claimed for such a procedure, and it has been referred to in several older text-books. Now it is suggested that four grammes of grey powder be inhaled as snuff each day in order to cure syphilis. For those who are ambitious to have their names circulated in association with a "marvellous" new method

of curing the ills that flesh is heir to, we would suggest that there yet remain two orifices in the body not yet utilised as a viaduct for mercury—the aural meatus, for example. The Americans are, we think, as keen on self-advertisement as is generally believed, whilst at the same time they must make most pliable and trustful patients.

The second section is especially interesting, though pertaining to collateral topics of a miscellaneous nature. It is edited by Dr. Moyer, and his collection of articles appear under such headings as the Physician and the Press, Heredity, Fake Medical Write-ups, Vitalism and Teleology in Natural Science, Autoprotective Mechanism of the Animal Body, Parasitism and Natural Selection, &c. &c.

We were greatly interested in studying this volume, and cordially recommend it.

S. S.

A Practical Guide to Meat Inspection (Walley). Fifth Edition, Re-written and Enlarged. By STEWART STOCKMAN, M.R.C.V.S., Chief Veterinary Officer of the Board of Agriculture and Fisheries, &c. Edinburgh and London: William Green & Sons. 1909 8vo. Pp. xiii + 282.

It is a matter of supererogation to attempt a review of a work which has already reached a fifth edition, the demand for it in the past is its best recommendation for the future.

This work of the late Professor Walley, edited and re-written by Mr. Stockman, has long been a text-book in the veterinary schools and in the hands of those who are engaged in the duties of meat inspection. It gives, in a succinct form, the main features of the morbid anatomy of food-producing animals, and epitomises in a readable manner the chief facts relating to the ætiology of disease. The chapter on meat poisoning is good, and we would have more—we should like to know if most of the cases of meat poisoning, the so-called ptomaïn poisoning, are really due to the activity of certain bacteria introduced along with the food, or to toxins. Present day information leads us to suspect bacteria and to give a secondary rôle to toxins other than those produced by the bacteria in the intestine. Perhaps when municipal laboratories

are instituted attention will be directed to this question, because it is quite possible that bacteria may reach the tissues after death which are non-pathogenic to animals and yet capable of producing serious illness in man—organisms of the colon type to wit.

We cordially commend the work to all interested in the inspection of meat.

A Synopsis of Surgery. By ERNEST W. HEY GROVES, M.S., M.D., B.Sc. (Lond.), F.R.C.S. (Eng.); Assistant Surgeon to the Bristol General Hospital. Bristol: John Wright & Sons, Ltd. 2nd Edition. 1910. Revised and Illustrated. Pp. viii + 579.

WE are pleased to welcome the second edition of this "Synopsis." Its scope is enlarged by the addition of chapters on Anæsthesia, Asepsis, and Diseases of the Colon and Spleen; while the chapters on Cranial Surgery have been re-written and illustrations provided. A welcome addition is the full illustration of the chapter on Surface Markings. The "Synopsis" will, by its methodical arrangement, prove of assistance to practitioners, teachers, and students, by presenting in a concise manner the diagnosis and treatment of surgical conditions.

Handbook of Diseases of the Ear. By RICHARD LAKE, F.R.C.S. Eng. Third Edition. London: Baillière, Tindall & Cox. 1910. Demy 8vo. Pp. xii + 248.

THIS volume would, perhaps, be best described as a handy text-book for practitioners and students.

The drawings in the anatomical chapter are good, and fulfil their proper function—namely, to explain the relation of parts as met with in treatment and operation without the unnecessary termological exactitude of an anatomical treatise.

Particularly interesting is the short chapter on special symptoms. In it the ordinary signs which are noticed by the surgeon, and symptoms which are complained of

by the patient, are grouped together, and their particular significance is dwelt upon.

The coloured plates of the drum membrane, showing many of its various abnormalities, are good and accurate both in drawing and colouring.

The chapter on labyrinthine diseases is brought up to date. The author mentions the new caloric and rotation tests, which are so helpful in the diagnosis of internal ear affections.

Finally, a short chapter on diseases of the ear from a life insurance point of view completes a work of considerable merit.

LITERARY NOTES.

MR. H. K. LEWIS, 136 Gower Street, London, W.C., has ready for early publication a collection of studies and essays by the late Dr. Thomas Logan. The collection will be issued in three volumes, entitled "Biological Physics, Physic and Metaphysics." The Editors are Dr. Quintin McLennan and Mr. P. Henderson Aitken, M.A., B.Sc., D.Litt. Another work shortly to be issued by the same firm is by Dr. William Gordon, of Exeter, on "The Influence of Strong, Prevalent, Rain-bearing Winds on the Prevalence of Phthisis." This work will be illustrated by upwards of twenty maps printed in colours which make very clear the points which the author seeks to establish. Amongst works just issued may be mentioned Dr. Richard Greeff's "Atlas of External Diseases of the Eye," translated by Dr. P. W. Shedd, and Professor Feodor Krause's "Surgery of the Brain and Spinal Cord, based on Personal Experiences," translated by Professor Herman A. Haubold; and an interesting pamphlet by Dr. Walter G. Walford on "Cerebral Congestion and Tight Neck-Clothing as an Insidious Cause for many Disorders." Mr. Lewis has also published in neat form a volume of short papers by Dr. Eustace Smith on "Some Common Remedies and their use in Practice," and the second volume of Binnie's "Operative Surgery," completing the fourth edition of the work. This volume deals with operations on the extremities, vascular system, &c., and is uniform in style, binding, illustrations, &c., with Vol. I.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR CHARLES BALL, F.R.C.S.I.
General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF OBSTETRICS.

President—H. JELLETT, M.D., F.R.C.P.I.
Sectional Secretary—GIBBON FITZGIBBON, M.D., M.R.C.P.I.

Friday, January 14, 1910.

The President, Dr. JELLETT, in the Chair.

Exhibits.

1. *Fibroid Myoma.*

1. PROFESSOR ALFRED SMITH exhibited a specimen of fibroid myoma. The patient had come to him in October last greatly distended, with a note from the doctor stating that he had tapped her a week previously in order to enable her to come to hospital. The patient told him she had been in the hospital fifteen years previously. He looked up the record, and found she had come in with a tumour about the size of a four and a half months' pregnant uterus. She had complained of no symptoms, menstruation was normal, she had no inconvenience whatever, and, according to the teaching then in vogue, he advised her to go home, as there was no reason for her to risk an operation. On the present occasion he did an exploratory operation to ascertain why there was such enormous distention. To his astonishment he found the tumour very little increased in size. It was a fibroid myoma of the entire uterus, and attached to it were great omental adhesions. Cullen, in his book, called it a parasitic fibroid myoma, because it obtained its major blood supply from sources outside the uterus, and stated that in parasitic myoma the omentum

became attenuated. In the specimen before them they would observe that the fragment of omentum was big and fat, although the myoma was parasitic. A pathologist had told him that the specimen had undergone sarcomatous degeneration. The chief point of interest was that the case brought home to them the lesson that the present day teaching as to interfering operatively in cases of fibroid myoma were perfectly justified.

2. Calcified Fibro-myoma.

PROFESSOR SMITH also exhibited a specimen of calcified fibro-myoma, or uterine stone. It lay to the right of the uterus, and he thought it was a small ovarian tumour.

DR. PUREFOY said the case illustrated the wise change which had been made in the treatment of fibro-myoma, and gave examples from his own experience in support of the present practice.

DR. KIDD said it occurred to him that it was quite possible for adhesions to take place between the omentum and the uterus without having to look on the tumour as altogether parasitic.

THE PRESIDENT said that calcified myomata of the uterus possessed a certain amount of interest to others than gynæcologists. He recently found a patient with prolapse who had a similar myoma in the middle line behind the symphysis. Dr. Watson, on seeing the case, remarked that the tumour could cause a considerable amount of confusion in the minds of X-rayists, as it might be mistaken for stone in the bladder.

PROFESSOR SMITH replied.

2. DR. E. HASTINGS TWEEDY showed :—

1. A Case of Ovarian Cyst and Pregnancy.

M. E. N., aged twenty-eight, 2-para, was admitted on December 25, 1909. Previous labour had forceps. She last menstruated on March 17, 1909. On examination there was found a tumour, cystic in consistence, reaching to the ensiform cartilage, overlying a pregnant uterus. An oblique groove, running across the abdomen two and a half inches below the umbilicus, separated the tumour from the uterus. There was a marked fluid thrill over the tumour, the greatest circumference of which was forty-five inches. Tympany was present in the flanks. A foetal heart was audible. Diagnosis of ovarian cyst and pregnancy was made. Ovariectomy was performed three days later, without complication, when twenty-five pints of clear, almost watery, fluid were

evacuated. A full term uterus was evident. Thirty hours later the patient fell into labour, and was delivered by forceps when the second stage had started of a 7 $\frac{3}{4}$ lb. child.

2. *A Case of Hypophrenic Abscess complicating Pregnancy.*

P. M., aged twenty-five, primipara, was seen in the extern maternity, and being deemed a General Hospital case was advised to go to one, but having tried one of these institutions was there advised to come to the Rotunda. She had been in a general hospital suffering from pneumonia until a week before Christmas. She was in great pain on admission to the Rotunda on January 5, and had been so from shortly after the time of her discharge from the general hospital. There was no history of gastric or renal trouble. On examination it was found that there was a tense resistant mass, dull on percussion, and well defined in its lower margin, which stretched from beneath the left costal arch across the middle line to the right costal arch, occupying the left hypochondrium, the epigastrium, and to a slight extent the right hypochondrium. The uterus was the size of a six months' pregnancy, and there was no communication whatever between the uterus and the growth. Mr. Heuston agreed that the diagnosis was hypophrenic abscess. An exploratory incision was made under local anæsthesia, and a general anæsthetic was given, when it was found necessary to enlarge the incision to below the umbilicus. The peritoneum was thickened and inflamed. A mass, cystic in appearance, which, when opened, was found to contain, firstly, a watery fluid followed by an immense amount of pus was apparent. The intestines were kept back by sponges, but a good amount of foul-smelling, purulent fluid escaped. The sac of the abscess was carefully irrigated with saline, and then the peritoneal cavity. A Keith's tube and CHI₃ gauze were placed in the abscess sac and CHI₃ gauze in front of the stomach. The sac seemed to have no connection whatever with any viscus. The patient suffered from shock after the operation, and needed a good amount of stimulation. Irrigation, with continuous saline, was commenced soon after the operation was finished, a pint being given for the first hour, half a pint for the next three hours. It returned after this, so was discontinued. Antistreptococcic serum 10 cc.s were given. Twenty-eight hours later patient started in labour, and was delivered by forceps of a six months' fetus three hours afterwards. Forceps were applied when the os was

fully dilated, owing to excessive straining. The placenta followed in due course. The convalescence so far has been very stormy. The Keith's tube was removed on the day following the operation, and was replaced by a small Kocher's tube; this was changed daily until the fourth day. The CHI_3 gauze was removed with difficulty on the third day. A great quantity of discharge came away on the dressings. Great difficulty was experienced in getting the bowels moved and in finding food which would not make her vomit. On the third evening symptoms of iodoform poisoning appeared. Patient became very restless, later becoming delirious. She had severe pain in the abdomen, and iodine was found in the urine. There was no rash. On the fourth night the pulse, which had ranged from 104 to 110, rose suddenly to 140, and later to 160. On the seventh afternoon patient had a rigor, and complained of great pain in her back. The appearance of the patient at present would lead one to suppose that there was nothing wrong with her. The pulse is about 120, the temperature is subnormal, but she has suffered from incontinence of feces. A culture was taken by Dr. Rowlette and showed no growth. The rarity of hypophrenic abscess following pneumonia, the accompaniment of pregnancy making it still more rare, are the reasons for the case being brought before you on this occasion.

PROFESSOR SMITH said the first case opened up the very large question as to operative interference during pregnancy. Formerly there was a superstition that they should not operate, but that had been quite altered, and there was not one of them who had not from time to time to do operations in pregnant patients. He had removed ovarian cysts and fibroid tumours from pregnant women, and in only one case in a number of such operations was pregnancy interrupted. The point was of considerable importance to the general practitioner. Personally he advised the removal of cyst as it might be a question of urgency at any moment owing to torsion of the pedicle, and they could not guarantee what might happen after delivery. As regards the time for operation, he would not operate until after the period had passed which corresponded to the usual time of the patient's menstruation.

DR. PUREFOY cited several cases in which he had operated without interrupting pregnancy.

DR. FITZGIBBON drew attention to a case in Mercer's Hospital the previous week of a young woman who had been operated on

twelve weeks previously for gastric ulcer. She had come into Mercer's on account of vomiting, and a tumour low down in the pelvis transpired to be a four months' pregnancy, which had obviously begun some weeks before the operation, and had gone on without interruption.

THE PRESIDENT also spoke.

DR. SOLOMONS, in reply, said the case of the cyst was up to full term. There had been two cases lately in the hospital about five months pregnant; one went to full term, and the other aborted after the operation.

Some Hints and Suggestions on the Teaching of Midwifery and Gynæcology.

DR. FRED. W. KIDD read a paper on this subject.

DR. STRITCH said he had taken out his midwifery in Edinburgh, and had to pass an examination on the course of lectures before attending labours.

PROFESSOR SMITH said he had recently taken up an American journal which, in indicating the correct course for a student to learn midwifery, did not indicate the method of Vienna or Berlin, but that of Dublin. They should try to realise the importance which was attached to anything that went forth from the Dublin School, and, therefore, strive to keep up their standard. The great claim of the Dublin School was that it was essentially practical. The main trend of midwifery examination was to educate the sense of touch so that they could realise the factors present in a case. They had in Dublin ample opportunities in the big maternities for such education. He was an advocate of the three months' system, but it must be a full three months. He believed in a clinical examination in gynæcology, but he did not think they would get much further forward by a clinical examination in midwifery. Gynæcology and midwifery should not be taught together, but in separate three months' courses.

DR. PUREFOY disagreed with Dr. Kidd's inference from the fact that so many students gladly availed themselves of the post-graduate course. He (Dr. Purefoy) took it that their interest had been aroused to such an extent that they wished to carry their studies further. The practice of note-taking had not been developed as it should be. The accurate description of a case which would give a realistic picture of the main features

of a case to a person who had not seen it was very often a matter of considerable difficulty. He thought the change to three months was most unfortunate, as it might lead students to estimate the importance of the subject by the time given to the study, and would make it practically impossible to provide the necessary material for enabling students to qualify for a certificate. He was strongly of opinion that the clinical examination in Midwifery ought to be carried on, as it had only been begun, and would be improved. The more their students practised palpation and educated the sense of touch, the more advantage they would derive in other departments of their profession.

DR. DEMPSEY considered that note-taking in a certain number of cases should be made obligatory. Even without its being compulsory, students could be got to take notes much better if the physicians in charge would show more attention to the notes that had been taken. He thought that the fact that classes would be smaller in a three months' course, and that students would, therefore, have greater opportunities for becoming acquainted with the work, was a point in favour of the short course, and he thought that the diligent student would have every facility in Ireland in getting out his cases. The manner of teaching gynæcology was a difficulty. He thought it was best taught in the extern department, but if the extern teaching was to be successful, the number of students must be limited, as patients did not care to have a crowd of men around them when undergoing examination. In Dublin they had a great deal of material for clinical examination, but in smaller centres it might be difficult to get cases that the students would not have had the opportunity of knowing something about.

DR. GIBSON said he had had charts printed which were to be given in the Coombe Hospital to each man going to extern cases. If a man wished to attend a hospital for six months he ought to have a chance of doing so, but men ought to be impressed with the benefit of living in a hospital for a time. This was, in his opinion, the only way to learn practical midwifery, and he considered that a term of residence for at least one month, with a definite amount of work during that time, should be made compulsory. Men should do a good deal of practical gynæcology while doing their midwifery, if they had not already done it. The fact that nurses training for the Central Midwives Board required twenty conductions, and that a student was not allowed to interfere

in any way with these conductions, made it difficult to train many nurses for the Central Midwives Board.

DR. SOLOMONS, speaking as a grinder, thought that it would be fatal to change to three months, as men would not be able to get sufficient practice in the time. Speaking of gynæcology, he said that if a man attended the Rotunda regularly he would easily get enough practical work to allow him to be able to recognise any normal or abnormal condition. He quite agreed that men should only be allowed to take out their practical course after having taken lectures. For the teaching of night students, lectures were given each night at 11 o'clock.

DR. PEARSON said that students were divided into two classes : the men who were conscientious, and who, if there were no lectures, would make it their business to learn something from text-books, and the men who simply wanted to get through the course by attending the requisite number of lectures on the chance of making a living. If, therefore, lectures were to be of any value, the lecturer himself should give an examination on his own course, and certify that the student is fit to start his practical course. Otherwise they would have the same state of affairs whether there were lectures or not. The value of note-taking would be enormous to a hospital for reference, particularly in extern cases. The notes would also give a student more interest, and make him feel that he was an essential part of the hospital.

DR. SPENCER SHEILL said they must not rest on the laurels won by their predecessors. There was a danger, in dwelling on the past, of not advancing with the times. In many things the Americans and Germans were far ahead of them. What had they done in the last few years for the advancement of midwifery, for the ætiology of eclampsia ? or what had they done for spinal anæsthesia or pubiotomy ? In congratulating Professor Kidd upon his paper, he said he considered it one of the most practical and useful contributions made to the Section for some time.

THE PRESIDENT said that Professor Smith and Dr. Sheill served the useful purpose of showing both sides of the question of the position of the Dublin School. There was no question that the reputation of the School was one of the greatest in Europe, but some things in connection with it required stringent treatment. Professor Smith did not really want to alter the period of midwifery and gynæcological training to three months, but to make

it two periods of three months each. The suggestion permitted the student to make use of the very large amount of material to be found in general hospitals, and it increased his opportunities of acquiring a practical knowledge of gynæcology. The difficulty was how to combine general and special hospital work in a single course. They were unanimous as to lectures preceding practice; but if a man who did not satisfy his examiner had to be put back, his whole course would be impeded. He thought that in the teaching of gynæcology, diagnosis should come first—it was the most important thing for a general practitioner with limited opportunities. Next to diagnosis came the indications for treatment, and the teaching of the treatment itself came last of all, as there were few gynæcological conditions that could be treated satisfactorily in general practice.

DR. KIDD, in reply, said that an explanation of the charge made by Dr. Sheill against the Dublin School might be found in the fact that they regarded the School as being in the van of teaching more in its practical aspect than in scientific investigation.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—PROFESSOR T. H. MILROY, M.D. Edin., F.R.S.E.

Sectional Secretary—E. P. M'LOUGHLIN, M.B., R.U.I.

Friday, January 21, 1910.

THE PRESIDENT in the Chair.

The Influence of the Addition of Calcium Salts on the Coagulability of the Blood in vitro.

PROFESSOR B. J. COLLINGWOOD gave a preliminary communication on the above subject. The coagulation time of blood is largely dependent on the method employed in its withdrawal. For example, the rate at which the blood is shed is a factor of the highest importance. In one individual it was found that when a deep puncture was made and a rapid flow secured the coagulation time was three and a quarter minutes; whilst in the same individual, if a slight puncture only was made and a drop of blood squeezed out, the coagulation time was only twenty seconds. Such an alteration in coagulability as this indicates the necessity

of the most careful technique in the investigation of the influence of the addition of calcium salts to blood *in vitro* on its coagulability.

Technique adopted.—Equal bulks of blood were taken from the *same* drop at the *same* moment by two individuals. The following manipulations were performed at the *same* moments of time by *each* individual, whom I will refer to as *A.* and *B.* :—

1. *A.* mixed his bulk of blood with quarter volume of a given strength of CaCl_2 solution. *B.* mixed his bulk of blood with quarter volume of an equi-normal strength of NaCl solution.
2. *A.*, after sealing tube, placed it in incubator at 37°C . *B.* imitated exactly the action of *A.*
3. After a stated interval of time *A.* removed tube from incubator, broke off the end of the tube, and blew out contents on to blotting paper, and noted whether clots were formed or no. *B.* imitated exactly the action of *A.*

The following table gives the results of a series of such experiments :—

Time of Incubation	Same Drops		Same Drops		Same Drops	
	N/20 CaCl_2	N/20 NaCl	N/30 CaCl_2	N/30 NaCl	N/40 CaCl_2	N/40 NaCl
1 min. 30 secs.	—	—	—	—	Nil	Nil
1 „ 40 „	—	—	—	—	Nil	Nil
1 „ 45 „	Nil	Nil	Nil	Nil	Clot	Clot
2 „ 00 „	Nil	Nil	Trace	Trace	—	—
2 „ 15 „	Nil	Clot	Clot	Clot	—	—
2 „ 30 „	Nil	Clot	—	—	—	—
2 „ 45 „	Nil	Clot	—	—	—	—
3 „ 00 „	Clot	Clot	—	—	—	—

Neither in these experiments nor in any other was any evidence obtained of the addition of calcium salts *increasing* the coagulability. It rather appeared that an addition of calcium of such a strength as to appreciably raise the calcium content of the mixture above that of the blood *diminished* coagulability. It was

found, however, that this diminution of coagulability was masked if thrombokinase was present in excess. This is shown by following experiments :—

		Same Drops		Same Drops	
		N/10 CaCl_2	N/10 NaCl	N/10 CaCl_2 + Thrombokinase	N/10 NaCl + Thrombokinase
Mins.	Secs.			Secs.	
1	45	Nil	Nil	15	Nil
2	00	Nil	Nil	20	Clot
2	15	Nil	Trace		
2	30	Nil	+ Trace		
2	45	Nil	Clot		
3	00	Nil	Clot		
3	15	Nil	Clot		
3	30	Nil	Clot		

Professor Collingwood concluded by expressing the opinion that the clinical utility of the administration of calcium in the treatment of hæmophilia and allied conditions must depend on other factors than the direct influence of calcium on the blood. He was indebted to the kindness of Sir Almroth Wright for the opportunity to carry out these experiments in the Inoculation Department of St. Mary's Hospital, London.

THE PRESIDENT said he thought the difference in coagulability in squeezing the finger was due naturally to tissue contamination. Blood taken off by a cannula would not clot for some time, but if a piece of muscle or tissue was added a clot was got at once. To decide whether calcium chloride in any strength increased coagulability they would have to test with extreme care. In most cases the increase was probably due to vaso-constriction, even in the case of a wound. A point of great importance in the power of lime to increase coagulability depended on the ionisability of the salt. It was quite possible that all the lime did was to aid clotting by acting as a local constrictor. The cause of thrombokinase hindering it ought to be worked out.

PROFESSOR McWEENEY said that thrombosis was of frequent occurrence in the state of recovery from typhoid fever. The explanation given was that such patients were always kept on a strictly milk diet, which possessed a considerable content of calcium. Speaking from memory, he thought Wright had reported finding in the blood of such persons four times the normal amount of calcium and twice the coagulability, and he was inclined to attribute it to the exclusive milk diet. In cases of erythema nodosum, Wright claimed that calcium had a good effect, no doubt by producing a general vaso-constriction. With the view that it had some such effect he was inclined to agree from personal experience, as he had known the swellings to disappear after three doses of calcium chloride.

MR. W. I. DE C. WHEELER said it was a general rule to give large doses of calcium for some days before prostatectomy. One might be wrong in such a practice, as an overdose might inhibit coagulation. Was it possible that hæmostasis was due to vaso-constriction when the calcium chloride was administered several days beforehand? It was hardly conceivable that the effect would be maintained up to the day of operation, and therefore cause hæmostasis. Moynihan threw discredit altogether on the administration of calcium, and adopted the method of injecting an alien serum, such as horse serum.

PROFESSOR COLLINGWOOD, in reply, said he had tried up to N/100. If calcium was added to about the same strength or weaker than the blood calcium, there was no result: if added stronger, there was the tendency to diminish coagulability. So far as he had gone, in no single instance had the addition of calcium increased coagulability. He did not think ionisation of the calcium necessary to the production of coagulation. He did not think Wright had proved his case, as milk contained many things besides calcium. It was said to contain thrombokinasé; and the proteid might have something to do with it. In typhoid they had a feeble circulation, which would tend to make the blood coagulate when shed on the surface. As regards continuity of action, calcium differed from other drugs, and was regarded as a physiological stimulant for contraction of the heart. He had done a number of experiments on himself, and he had not been able to prove that he had absorbed any calcium. He would try taking a pint of milk instead of a drachm of calcium chloride. He had not been able to get any definite results with regard to the excretion

in the urine. Injection of serum seemed to be a more rational treatment for the prevention of hæmorrhage than calcium, as the serum contained a fibrin ferment at some stages. A comparison between old and new serum was interesting: serum of four days might not cause coagulation at all, but might be inhibitory. It was a curious fact that men who had given calcium said the bleeding was just as bad as ever, whereas when magnesium was given the results were excellent; and yet one found that magnesium had no power in experiments *in vitro*. He thought the connection must be one of vaso-constriction, and had nothing to do with the direct action of the blood.

Some Observations on the Oxygen Capacity of Blood.

A communication by DR. J. A. MILROY on the above subject was then read by the President. Haldane's method for the determination of the oxygen capacity of the blood gives excellent practical results; and, assuming that an oxygen capacity of 18.5 cc. corresponds to blood having the normal percentage of hæmoglobin, the results obtained have been successfully used in standardising solutions for his colorimetric method for the estimation of hæmoglobin. Yet the exact relation between the oxygen capacity of a given sample of blood and the percentage of hæmoglobin in it is still uncertain. According to Hüfner one gramme of oxyhæmoglobin is capable of yielding 1.34 cc. of oxygen, either *in vacuo* or as a result of the action of potassium ferricyanide. The same figures apply to carboxyhæmoglobin. Assuming that 18.5 cc. is the oxygen capacity of normal blood, the percentage of hæmoglobin present in it would therefore be 13.8. Haldane, Bohr and his pupils dispute Hüfner's results. As the result of a large number of determinations. Bohr states that the quantity of oxygen fixed by one gramme of hæmoglobin is not constant. The chief reasons for this discrepancy are the following:—First, oxyhæmoglobin, during the process of purification by crystallisation, becomes partly converted into methæmoglobin. The latter pigment does not yield up its oxygen either *in vacuo* or when treated with potassium ferricyanide. Another source of error lies in the fact that the oxygen capacity of the hæmoglobin derived from different animals appears to differ in value. For these reasons it is of considerable importance to determine the oxygen capacity of the blood in relation to some more definite standard than hæmoglobin. The

power possessed by hæmoglobin of fixing oxygen and carbonic oxide has been shown by Hoppe-Seyler to be entirely dependent on the hæmatin radicle. He also found that the quantity of carbonic oxide fixed by it corresponded to one molecule of carbonic oxide for each atom of iron. This carbonic oxide capacity is equivalent to 399.8 cc. for each gramme of iron. Pregl and Hüfner, with the aid of more accurate methods, proved that in alkaline solution reduced hæmatin unites with the exact theoretical proportions of carbon monoxide, forecast by Hoppe-Seyler's results. Since hæmatin has a constant composition whatever the source of the blood from which it is derived, and since the quantity of iron in it is accurately known, it follows that the oxygen capacity of blood is best stated in relation to the quantity of iron rather than in terms of hæmoglobin. Bohr carried out a large number of concurrent estimations of the iron in blood and the quantity of oxygen obtainable *in vacuo*, and introduced the phrase specific oxygen capacity of blood to define the quantity of oxygen yielded by a quantity of oxyhæmoglobin containing one gramme of iron. The values which he obtained were, as a rule, considerably lower than the theoretical one of 399.8 cc. He obtained similar results for the carbonic oxide capacity of blood. In some experiments on the specific carbonic oxide capacity of pure reduced acid hæmatin, Dr. Milroy also obtained results distinctly lower than the theoretical, but closely approximating to those of Bohr. Notwithstanding these facts, the specific carbonic oxide capacity of reduced alkaline hæmatin is almost certainly constant, since the results obtained by three independent observers—Hoppe Seyler, Hüfner and Pregl—agree very closely with one another. Further light on the subject would probably be obtained by carrying out concurrent estimations—first, of the iron in different samples of blood; secondly, of the oxygen capacity by the ferri-cyanide method; and thirdly, of the carbonic oxide capacity of blood in which the hæmoglobin had been decomposed so as to yield reduced alkali hæmatin. In view of Hoppe-Seyler's, Hüfner's and Pregl's results, the first and second series of estimations would be most likely to yield concordant results. Dr. Milroy was at present engaged on work along these lines.

Estimation of β -hydroxybutyric Acid.

MR. W. M. CALDWELL gave a preliminary communication on the method of estimation of β -hydroxybutyric acid, which was discussed by the PRESIDENT and PROFESSOR McWEENY.

Abnormal Vermiform Appendix.

MR. W. I. DE C. WHEELER exhibited an unusual type of vermiform appendix got in the dissecting room about a week previously. The specimen reached almost the maximum length of six inches. It lay close to outer side of the posterior wall of the ascending colon, outside the peritoneal cavity. At the end of the appendix was a long fibrous cord, continuous with the peritoneum, over the front of the surface of the kidney. The condition might be explained by an intrauterine peritonitis, the tip of the appendix being anchored above by the inflammatory material. The cæcum was of the conical foetal type in the same subject. The colon, instead of passing from the left iliac fossa into the pelvis, turned sharply upwards and formed a long loop in the abdominal cavity before finally descending into the pelvis to end in the rectum. There was marked narrowing at the upward bend, but nothing pathological. The colon was laden with fæces, and Mr. Wheeler imagined that the patient died of intestinal obstruction.

Model of Nervous System of "Trutta Fario."

DR. N. C. RUTHERFORD showed a model of the brain, chondrocranium, sense organs and cranial nerves of *Trutta Fario*. The model was constructed of wax plates on the Born method at a magnification of one hundred times. The period illustrated was an embryonic one at the beginning of the week before hatching. At this period, the development of both brain and chondrocranium illustrate a transition stage of considerable value with reference to the method of their evolution—a value still further enhanced by the inclusion in the model of the particular features of the cephalic sense organs. The various portions of the brain were demonstrated, and the relative stages of growth noted. The cranial nerves were touched upon with especial reference to the dromic sense organs of the head and lateral line. The cartilaginous elements of the cranium were detailed according as they formed part of the viscerocranium and neurocranium, and of the divisions of the latter—the paleocranium and neocranium. The model was much admired by the meeting, and several members expressed their appreciation of this beautiful exhibit and of the interesting demonstration given by Dr. Rutherford.

SECTION OF STATE MEDICINE.

President—E. J. McWEENEY, M.D., F.R.C.P.I.

Sectional Secretary—W. A. WINTER, M.D., F.R.C.P.I.

Friday, January 28, 1910.

THE PRESIDENT in the Chair.

The Precipitin Reaction in Medico-legal Work.

THE PRESIDENT delivered an inaugural address on this subject. He said that, up to the year 1900, the difficulties in the way of certainly identifying the origin of blood-stains were practically insuperable. The differences in size between the red corpuscles of man and those of the domestic animals were insufficient to admit of certain microscopic distinction unless the blood were fresh and unaltered, which is practically never the case. It was from the bacteriological side, owing to the labours of Uhlenhuth, Wassermann and Schütze in Germany, and of Nuttall in this country, that this unsatisfactory state of things was changed, and the biological method elaborated. The speaker referred to his own experience of the method which he had been applying in medico-legal cases for the Crown in Ireland since 1902. Quite recently he had had to inquire into a case in which there was one spot of blood and one only on the clothes of a man accused of committing a murder. It was on his cap, and was no bigger than a threepenny piece. By the aid of highly potent anti-serums and the capillary tube method he was enabled to satisfy himself that the blood was not of human, but of equine, origin, and reported to that effect. On subsequent inquiry it was found that the accused man had been in the employment of a large horse-dealer, and had frequently to perform, or assist at, operations on horses. In another case, where a man accused of a brutal murder had tried to account for blood-stains on his knife by saying that he had been killing a goat, he (the speaker) had been able to show that the stains in question were composed of human and not of goat's blood. The man had since been executed. The speaker then entered upon a minute description of the several steps of the method—the obtaining of the antigen, the preparation of the animal (rabbit) for the production of the specific anti-serum, the preparation of the stain-extract, the titration of the precipitating power of the anti-serum, and the determination of its specificity. He referred to the

delicacy of the method, which could be made to reveal as little as $\frac{1}{20000}$ gramme of albumen, and to the sources of error, the most important being the overlapping of the reaction on either serums or stain-extracts from biologically allied, and sometimes from widely removed, species (Nuttall's "Mammalian Reaction"). He described how these errors were to be avoided by using the antigen diluted to somewhere near the *titre* of the anti-serum. The other biological method of diluting the origin of albuminous matter—that by complement fixation—was then briefly referred to, and the speaker concluded by pointing out the wide possibilities of the precipitin method, and the uses to which it might be applied in hygienic work—such, for example, as the detection of horse and cat flesh in sausages.

The address was followed by a demonstration of the mode of determining the precipitating power and specificity of a sample of anti-human serum, and the recognition by means of anti-ox serum of the bovine origin of a blood stain that had been over two years dried on boot leather.

DR. O'FARRELL referred to the work done by Professor Muir in connection with the overlapping of the various serums. He desired to know if Professor McWeeney had tried heating the different serums, and driving off the complement, and seeing if the reaction came about by adding fresh complement. The possible presence in linen of some complement-fixation substance was easily understood, as the material in preparation being macerated for a long time much chemical changes must take place. Was it possible, he asked, that by bringing about a reaction in cancer cells an early diagnosis of carcinoma could be made?

PROFESSOR METTAM said he believed he was correct in saying that Nuttall stated that simple frothing contained quite sufficient of protein material to give a reaction with the anti-serum. He did not quite agree with Professor McWeeney on the question of anaphylaxis. He thought it usually arose after the second dose when a major dose was given. In Professor McWeeney's cases the doses given were equivalent. He would like to draw attention to the explanation given by Vaughan. He took egg-white, and found it was composed of two bodies, one soluble in alcohol and one not. When injected, one was poisonous and one was not. The explanation of anaphylaxis was that in the minimum dose the poisonous was split off from the non-poisonous molecule, and the non-poisonous produced sets of anti-bodies, and the poisonous,

being of so small a quantity, was harmless to the animal, or did insignificant damage. As a result of the injection of the non-poisonous portion a number of receptors were formed in the body. Then, when a larger quantity came in it was immediately split, and the non-poisonous parts of them were immediately attacked by the receptors, which liberated a large amount of the poisonous element, and this caused death.

PROFESSOR McWEENEY, in reply, said the presence of acid or alkali, even in small quantities, completely upset the reaction. He had tried to reactivate inactivated precipitin serum with complement, but had failed. Precipitin serum stood heating better than hæmolytic serum. It was evident that its precipitating group was much more stable than complement. He saw that his solution was quite colourless. It should foam briskly and give a slight, but distinct, nitric acid reaction. It should be worked down by degrees until it ceased to give a reaction. Of course, they were reduced to surmise as to what the actual dilution was. It had been found that serum taken from anaphylactic animals had no complement in it; and, inasmuch as complement was a most important constituent of human serum, it seemed to him more natural to account for the symptoms of the animals by the deprivation of an important element in the blood than by a purely hypothetical splitting of an albuminous substance, which seemed to him to belong to the realm of incompletely ascertained facts. His anaphylactic animals had had first a small dose, and then a second large one; the result was they died inside five minutes.

SECTION OF MEDICINE.

President—WALTER G. SMITH, M.D., F.R.C.P.I.

Sectional Secretary—F. C. PURSER, M.D., F.R.C.P.I.

Friday, February 18, 1910.

DR. LITTLE in the Chair.

Exhibits.

DR. BOYD BARRETT exhibited the following cases:—

Acquired Imbecility.

J. B., aged five and a half years, a boy, is unable to speak articulately. He can do little more than "grunt." He under-

stands everything said to him, and is somewhat obedient. He did not walk until he was three years old. He is subject to fits of temper, and, as his mother says, "does terrible things," which means that he thinks nothing of throwing china cups over the garden wall. His face is marked by congenital syphilis, the bridge of the nose is sunken, and his mouth is scarred. His mother had several miscarriages. He is the only child that lived. Syphilis is the most common cause of secondary or acquired imbecility. It is also the cause in childhood of that fatal mental degeneration, analogous to general paralysis of the insane in adults, called "juvenile general paralysis." The latter is a progressive and fatal disease. This boy, however, enjoys good health. He is getting stronger every day, and what probably occurred in his case was that, owing to the syphilitic virus, a dystrophy, malformation or anomaly of structure in the brain took place in foetal life. Dr. G. Still, in his article in "A System of Syphilis," states:—"It may be that syphilis is only an indirect factor in some cases, and that, like any other cause of ill-health in the mother, it interferes with her reproductive power, and so causes imperfect cerebral development in the foetus without producing in the foetal tissues or in extra-uterine life any of the specific lesions of syphilis." He goes on to say that parental syphilis may be responsible for congenital idiocy, even when there are no signs of syphilis in the child. A report of twenty-eight cases of idiocy with necropsy (Raviart and Cannæ, *L'Echo méd.*, May, 1909) shows the high rôle that syphilis plays in such cases and the variety of changes evident in the brain. Wassermann's reaction succeeded in 47 per cent. of the cases. Amongst the pathological changes were (1) thickening and adherence of the meninges, (2) simple arrest of development, (3) absence or atrophy of such portions of the brain as the frontal lobes, corpus callosum, &c.; one patient had (4) microcephaly, and another (5) great simplicity of the convolutions; another (6) showed so-called hypertrophy of the brain, and also was a case (7) of myxœdematous idiocy.

Genetous Type of Imbecility, with Single Ptosis.

The patient is a girl, aged ten years. She is quiet and diffident. She has a pale, unhealthy colour, her left eyelid droops, and she shows that type of face and chest which is associated with adenoids. Her expression is vacant. Her speech is jerky and indistinct.

The family history on the mother's side was extremely good. The father did not drink to excess. Both parents and the other children in the family were healthy. However, all the near relations on the father's side drank excessively. The child's paternal grandmother was said to have "died of drink." This is of importance. Dr. W. A. Potts, writing recently on the subject (*British Journal of Children's Diseases*, April, 1909), states, in reference to American statistics—"The close investigation of these records shows that often it is not drinking on the part of the parents, but in an earlier generation, that does the mischief." Before discussing the prognosis Dr. Barrett briefly mentioned the stigmata of degeneration present in this case. (1) Physical stigmata—Vacant expression; Gothic palate; winged ears, with deficient helix. (2) Physiological—nocturnal enuresis to age of nine; fecal incontinence to age of seven; slow in learning to walk and talk. (3) Psychological—Body restless; rhythmic movements of hands; cannot be taught to read, write or sew; loses temper easily; loves dirt and mud. The prognosis must now be considered. This girl, at the age of ten years, can walk and talk. That is about all she can do. She is unable for any serious bodily or mental exertion. She has, unfortunately, a feeble mind in a feeble body. From the grosser defects of childhood she has emerged, but further progress is unlikely. It only remains now to answer two questions. Will she live long? Will she be able to earn her livelihood? The answer to both must be in the negative.

Mongol.

J. O'H., aged five years, is a typical case of this serious condition. With the possible exception of umbilical hernia and congenital heart disease he has all the chief signs and symptoms of mongolism. He is restless in manner, and chatters unintelligibly but ceaselessly. The complexion is fair. The eyes are oriental, and marked epicanthic folds are evident. He used to dribble and protrude the tongue, but in these respects he has improved somewhat. He has a curious incurvation of the little finger. The head is brachycephalic. Although he is five years old he cannot walk. He was late in sitting up, late in teething, and late in observing. Mongolism is such a serious condition, with such a bad prognosis for life and utility, that it is of the utmost importance to recognise it.

Pseudo-hypertrophic Muscular Paralysis.

DR. DEMPSEY showed two cases of boys, brothers, aged eleven and twelve. There was nothing peculiar about the family history, except that an uncle had had some nervous disease. When the elder boy was five or six years of age his mother noticed that he commenced to trip, and had difficulty in going upstairs. In a couple of years he had difficulty in walking, and now, about six years after the onset, he has to be carried. The younger boy was in good health up to a couple of years ago, when he commenced to suffer in the same way. He now showed the combination of atrophy and hypertrophy, which was characteristic of the disease.

DR. KIRKPATRICK, referring to the case of mongolism, said he had been on the watch for the mongol spots in children. The stigma was fairly common in Europe, but he had not met with any, or seen any recorded, in this country.

DR. DAWSON said the case bore out the modern idea of mongolian idiocy. The old idea of syphilis was more or less exploded, and it was now held that it was due to malnutrition of the foetus in utero, occurring, as it did, when a child was born at the end of a long family. It had been pointed out that the little finger and thumb in such cases were always abnormally short: those symptoms were present in the case. There was also a slightly spotted condition of the child's iris.

DR. BARRETT replied.

The Physico-therapy of Sciatica.

DR. M. ORB (St. Ann's Hill, Cork) read a paper on this subject. He divided cases of sciatica, for purposes of treatment, into two classes—acute and chronic—and made no distinction between cases as to their pathology. For the former class he relied chiefly on hot applications and very gentle massage, combined, of course, with absolute rest in bed. Blistering and acupuncture he never employed. For chronic cases, massage, hot and cold douches alternately applied (Scotch douche), and active and passive exercising of the affected limb. All treatment being directed to an endeavour to increase the rapidity of the circulation through the affected part. (The paper is printed in full at page 245.)

THE CHAIRMAN said he was sure they would all endorse his experience that, among the immense variety of sciatic cases, he

had had some that he wished would go to anyone else. He knew a lady who had ruined the reputation of several physicians and surgeons. He had had an unsatisfactory experience of the surgical treatment of nerve-stretching, and his opinion was that in what was called acute cases the one remedy was absolute rest.

DR. CRAIG said he was accustomed to deal with neuralgic cases as distinct from the neuritic, and there was no doubt that neuralgia of the sciatic nerve had to be treated in much the same way as neuralgia of any other nerve, and generally yielded to anti-neuralgic treatment. The neuritic cases, however, gave a great deal of trouble. He had been introduced to Corrigan's button many years ago, and had the greatest belief in it, with, of course, some little medical treatment as well. Nerve-stretching was, he believed, associated with considerable danger. A patient of his had had his nerve stretched during his absence, and died subsequently of myelitis. He believed that the hypodermic injection of morphin was one of the few things that gave rest when pain was severe.

DR. ORB replied.

Acute Leukæmia.

DRS. TRAVERS SMITH and EARL read a paper on the above subject. [This paper will be found at page 241.]

JAPAN-BRITISH EXHIBITION, LONDON, 1910.

SIR HENRY MORRIS, Bart., M.A., F.R.C.S., is the Chairman of the Scientific and Surgical Instruments Section of the Japan-British Exhibition which, under the auspices of the Imperial Japanese Government and with the cordial approval of the British Government, is to be held in the coming summer at the "White City," Shepherd's Bush, London, W. The Japanese are entering upon the enterprise of this Exhibition with the energy and thoroughness which are characteristic of their nation, and from their point of view success is assured. Sir Henry urges upon all British makers of instruments that come within the scope of the Section to give such co-operation and make such a display of their productions as shall be worthy of so great an opportunity, and shall secure that the British nation may be adequately and honourably represented in the exhibition.

SANITARY AND METEOROLOGICAL NOTES.

VITAL STATISTICS.

For four weeks ending Saturday, February 26, 1910.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended February 26, 1910, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 22.8 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,151,790. The deaths registered in each of the four weeks ended Saturday, February 26, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality :—

TOWNS, &c	Week ending				Aver- age Rate for 4 weeks	TOWNS &c	Week ending				Aver- age Rate for 4 weeks
	Feb. 5	Feb. 12	Feb. 19	Feb. 26			Feb. 5	Feb. 12	Feb. 19	Feb. 26	
22 Town Districts	25.0	26.0	22.8	22.8	24.1	Lisburn	22.7	36.4	27.3	22.7	27.3
Armagh	20.6	—	20.6	13.7	13.7	Londonderry	14.4	20.4	14.4	10.8	15.0
Ballymena	14.4	43.1	14.4	19.2	22.8	Lurgan	17.7	53.1	22.1	22.1	23.7
Belfast	22.0	22.9	20.8	18.7	21.1	Newry	21.0	46.2	8.4	46.2	30.4
Clonmel	20.5	46.2	35.9	20.5	30.8	Newtown- ards	51.5	40.1	22.9	28.6	35.8
Cork	31.5	26.7	26.7	23.3	27.0	Portadown	20.7	15.5	15.5	15.5	16.8
Drogheda	20.4	20.4	16.3	20.4	19.4	Queenstown	33.0	46.1	13.2	26.4	29.7
Dublin (Reg. Area)	29.8	26.4	26.5	28.0	27.7	Sligo	24.0	14.4	19.2	9.6	16.8
Dundalk	4.0	12.0	27.9	12.0	14.0	Tralee	10.6	21.1	15.9	74.0	30.4
Galway	19.4	46.6	3.9	3.9	18.5	Waterford	21.4	44.8	29.2	17.5	28.2
Kilkenny	24.6	39.3	44.2	9.8	29.5	Wexford	14.0	32.7	18.7	42.0	26.8
Limerick	27.3	16.4	12.3	21.9	19.5						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, February 26, 1910, were equal to an annual rate of 1.3 per 1,000, the rates varying from 0.0 in seventeen of the districts to 4.8 in Ballymena, the 4 deaths from all causes for that district including one from whooping-cough, one from diphtheria, and one from diarrhœa. Among the 140 deaths from all causes registered in Belfast are 14 from whooping-cough, one from scarlet fever, one from diphtheria, and one from *pyrexia* (origin uncertain). Of the 34 deaths from all causes registered in Cork one is from enteric fever, and among the 16 deaths from all causes registered in Limerick are 2 from whooping-cough.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 402,928, that of the City being 310,298, Rathmines 37,047, Pembroke 28,948, Blackrock 9,013, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, February 26, 1910, amounted to 224—126 boys and 98 girls; and the deaths to 228—117 males and 111 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 29.5 in every 1,000 of the population. Omitting the deaths (numbering 12) of persons admitted into public institutions from localities outside the Area, the rate was 28.0 per 1,000. During the eight weeks ending with Saturday, February 26, the death-rate averaged 25.9, and was 2.3 below the mean rate for the corresponding portions of the ten years 1900-1909.

The total deaths (amounting to 228) included one death from enteric fever and one from scarlet fever, 2 deaths from diphtheria and 3 deaths from diarrhœal diseases, 2 of the latter being those of children under five years of age. The deaths of 2 children under five years of age from enteritis and of 2 from *gastro-enteritis* were also registered. In each of the three preceding weeks deaths from diphtheria had been 2, 2, and 0; deaths from enteric fever had been 0, 0, and 0; deaths from diarrhœal diseases had been 4, 6, and 2; and deaths from scarlet fever had been 0, one, and 2.

There were 2 deaths from influenza, which in each of the three preceding weeks had caused 4, 3, and 2 deaths, respectively.

The deaths from pneumonia (all forms) included 15 deaths from broncho-pneumonia, 2 deaths from lobar pneumonia, and 5 deaths from *pneumonia* (not defined).

The deaths (36) from all forms of tuberculous disease included 23 from tubercular phthisis (*phthisis*), 4 from tubercular meningitis, one death from *tabes mesenterica*, and 8 deaths from other forms of the disease. Deaths from all forms of tuberculous disease in the three preceding weeks had been 43, 29, and 33 respectively.

There were 7 deaths from carcinoma, and 7 deaths from cancer, malignant disease (undefined).

Three deaths of prematurely born infants were recorded.

Of 12 deaths attributed to diseases of the brain and nervous system, 6 were from *convulsions*; of the latter figure, 2 were deaths of infants under one month, 2 were between one month and one year, and 2 were between one and 5 years of age.

Diseases of the heart and blood-vessels caused 31 deaths, and of 41 deaths from diseases of the respiratory system bronchitis caused 38 deaths.

Of 6 deaths caused by accident or negligence there were 5 from burns, 2 of the latter being those of children under five years of age, and one death was on a railway.

In two instances the cause of death was "uncertified," there having been no medical attendant during the last illness; both were of persons aged 60 years and upwards.

Sixty-seven of the persons whose deaths were registered during the week were under 5 years of age (43 being infants under one year, of whom 15 were under one month old), and 81 were aged 60 years and upwards, including 47 persons aged 70 and upwards, of whom 12 were octogenarians.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," and the "Tuberculosis Prevention (Ireland) Act, 1908," as set forth in the following table, have been furnished by Sir Charles

A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. R. A. O'Donovan, Medical Superintendent Officer of Health for Kingstown Urban District; and by Dr. Bailie, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended February 26, 1910, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain, <i>a</i>)	Lymphatic or Latent Fever	Erysipelas	Furunculæ	Whooping-cough	Cerebro-spinal Fever	Tubercular Phthisis (<i>Phthisis</i>)	Total
City of Dublin	Feb. 5	-	*	*	10	-	-	18	-	2	6	14	-	*	-	12	72
	Feb. 12	-	*	*	6	-	-	3	-	1	4	9	-	*	-	21	45
	Feb. 19	-	*	*	5	-	-	11	-	2	6	10	-	*	-	22	56
	Feb. 26	-	*	*	9	-	-	7	-	1	2	16	-	*	-	26	61
Rathmines and Rathgar Urban District	Feb. 5	-	*	*	-	-	-	1	-	-	-	1	-	*	*	*	2
	Feb. 12	-	*	*	-	-	-	3	-	-	-	-	-	*	*	*	3
	Feb. 19	-	*	*	-	-	-	-	-	-	2	-	-	*	*	*	3
	Feb. 26	-	*	*	-	-	-	1	-	-	2	-	-	*	*	*	6
Pembroke Urban District	Feb. 5	-	-	-	2	-	-	-	-	-	-	-	1	-	-	*	3
	Feb. 12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	1
	Feb. 19	-	-	-	-	-	-	1	2	1	-	-	-	-	-	*	6
	Feb. 26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	2
Blackrock Urban District	Feb. 5	-	*	*	-	-	-	-	-	-	-	-	-	*	-	*	-
	Feb. 12	-	*	*	3	-	-	-	-	-	-	-	-	*	-	*	3
	Feb. 19	-	*	*	-	-	-	1	-	-	-	-	-	*	-	*	1
	Feb. 26	-	*	*	-	-	-	-	-	-	-	-	-	*	-	*	-
Kingstown Urban District	Feb. 5	-	*	*	-	-	-	-	-	-	-	-	-	*	*	1	1
	Feb. 12	-	*	*	2	-	-	-	-	-	-	-	-	*	*	-	2
	Feb. 19	-	*	*	-	-	-	-	-	-	-	-	-	*	*	-	-
	Feb. 26	-	*	*	-	-	-	-	-	-	-	-	-	*	*	-	-
City of Belfast	Feb. 5	-	*	*	15	-	-	2	-	-	2	6	-	*	*	21	42
	Feb. 12	-	*	*	15	-	-	-	-	-	-	6	-	*	*	19	40
	Feb. 19	-	*	*	9	-	-	1	-	1	2	5	3	*	*	23	45
	Feb. 26	-	*	*	16	-	-	4	-	1	2	11	-	*	*	23	57

a Contagious Fever.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended February 26, 1910, one case of measles was admitted to hospital, 2 were discharged, and 2 cases remained under treatment at its close.

Nine cases of scarlet fever were admitted to hospital, 12 were discharged, and 55 cases remained under treatment at the close of the week. This number is exclusive of 20 convalescents from the disease under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital. At the close of the three preceding weeks the cases in hospital had been 66, 66, and 58 respectively.

Two cases of typhus remained under treatment in hospital at the close of the week.

Seven cases of diphtheria were admitted to hospital, 7 were discharged, there were 2 deaths, and 41 patients remained under treatment at the close of the week. The cases in hospital at the close of the three preceding weeks had numbered 46, 37, and 43 respectively.

Six cases of enteric fever were admitted to hospital during the week, 7 were discharged, there were 2 deaths, and 35 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 7 cases of pneumonia were admitted to hospital, 11 were discharged, there was one death, and 44 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, February 26, in 76 large English towns, including London (in which the rate was 14.8), was equal to an average annual death-rate of 14.7 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 16.2 per 1,000, the rate for Glasgow being 15.9, and for Edinburgh 14.9.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended February 26. From this report it appears that of a total of 48 cases notified, 20 were of scarlet fever, 17 of phthisis, 5 of diphtheria, 5 of erysipelas, and one of puerperal fever.

Among the 364 cases of infectious diseases in hospital at the close of the week were 173 cases of scarlet fever, 75 of measles, 59 of phthisis, 12 of whooping-cough, 26 of diphtheria, 5 of erysipelas, 3 of puerperal fever, one of enteric fever, and one of cerebro-spinal fever.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of February, 1910.

Mean Height of Barometer, - - -	29.471 inches.
Maximal Height of Barometer (9th, at 9 a.m.),	30.293 „
Minimal Height of Barometer (20th, at 9 p.m.),	28.237 „
Mean Dry-bulb Temperature, - - -	41.4°.
Mean Wet-bulb Temperature, - - -	39.6°.
Mean Dew-point Temperature, - - -	37.3°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.226 inch.
Mean Humidity, - - -	85.8 per cent.
Highest Temperature in Shade (on 5th),	55.4°.
Lowest Temperature in Shade (on 1st),	32.7°.
Lowest Temperature on Grass (Radiation) (23rd),	28.9°.
Mean Amount of Cloud, - - -	58.6 per cent.
Rainfall (on 24 days), - - -	3.758 inches.
Greatest Daily Rainfall (on 18th),	.810 inch.
General Directions of Wind, - - -	W., S.W.

Remarks.

February, 1910, proved to be a very inclement month—stormy, wet, and in all respects changeable. It was for the most part cold, and, although there was scarcely any frost in Dublin, hail, sleet, or snow fell on many days. From the 10th inclusive to the end there was a daily measurement of rain, as much as 2.354 inches being recorded in the five days ending the 21st. The broken weather was connected with a very disturbed atmospheric condition, depression after depression passing across the north-west of Europe from the Atlantic in rapid succession. A feature of the month's weather was the frequent occurrence of thunder and lightning in many districts of the British Isles. The deepest depression of the month was observed on the evening of the 20th, when the barometer fell to 28.130 inches at Blacksod Point.

In Dublin the mean temperature (42.5°) was 0.1° above the average (42.4°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 41.4°. In the forty-six years ending with 1910, February was coldest in 1895 (M. T. = 34.2°), and warmest in 1903 (M. T. = 47.5°). In 1909 the mean temperature was 42.7°.

The mean height of the barometer was 29.471 inches, or 0.384 inch below the average value for February—namely, 29.855 inches. The mercury rose to 30.293 inches at 9 a.m. of the 9th,

and fell to 28.237 inches at 9 p.m. of the 20th. The observed range of atmospheric pressure was, therefore, 2.056 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 41.4° , or 1.2° above the value for January, 1910. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.*) $\times .50$, the M. T. is 42.5° , compared with a thirty-five years' (1871–1905) average of 42.4° . On the 5th the thermometer in the screen rose to 55.4° —wind, W.S.W.; on the 1st it fell to 32.7° —wind, S.W. The minimum on the grass was 28.9° on the 23rd.

The rainfall was 3.758 inches, distributed over 24 days. The average rainfall for February in the thirty-five years, 1871–1905, inclusive, was 2.010 inches, and the average number of rainy days was 15. The rainfall, therefore, was considerably above the average, and so were the rainy days. In 1883 the rainfall in February was large—3.752 inches on 17 days; in 1879 also 3.706 inches fell on 23 days. On the other hand, in 1891, only .042 inch was measured on but 2 days. In 1909, only .593 inch fell on 8 days.

There was some fog on the 22nd. The amount of cloud—58.6 per cent.—was below the average—66 per cent. High winds were noted on 16 days, and reached the force of a gale on the 14th, 16th, 17th, 19th, 20th, 21st, and 22nd. Hail fell on the 7th, 15th, 21st, 22nd, 24th, 26th and 28th. Snow or sleet fell on the 11th, 15th, 22nd and 26th. Solar halos appeared on the 4th, 14th, 18th and 27th. Lunar halos were seen on the 16th, 17th, 21st and 23rd, and lunar coronas on the 19th and 20th. A brilliant meteor was seen at 6 32 p.m. of the 28th.

The temperature reached or exceeded 50° in the screen on 9 days, but it never fell to 32° . The minima on the grass were 32° or less on 12 nights, compared with every night in 1895. The thermometer never failed to rise to 40° in the screen in the daytime. The highest minimum was 51.1° on the 6th.

In Dublin the rainfall up to February 28th amounted to 6.751 inches on 41 days, compared with 1.857 inches on 22 days in 1909, 3.427 inches on 36 days in 1908, 1.732 inches on 23 days in 1907, 5.771 inches on 42 days in 1906, 2.647 inches on 26 days in 1905, 5.847 inches on 36 days in 1904, 5.503 inches on 35 days in 1903, 3.362 inches on 22 days in 1902, 3.872 inches on 29 days in 1901, and a thirty-five years' (1871–1905) average of 4.220 inches on 33 days.

At the Normal Climatological Station in Trinity College, Dublin, Mr. W. H. Clark, B.A., reports that the mean height of the barometer was 29.474 inches. The range of atmospheric pressure was between 30.280 inches at 9 a.m. of the 9th and 28.234 inches at 9 p.m. of the 20th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 42.3° . The arithmetical mean of the daily maximal and minimal temperatures was 43.2° . The screened thermometers rose to 56.0° on the 5th, and fell to 29.5° on the 1st. On the 1st the grass minimum was 21.5° . Rain fell on 23 days to the amount of 3.550 inches, the greatest fall in 24 hours being .785 inch on the 18th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 89.1 hours, of which 8.4 hours occurred on the 23rd, and 5.7 hours on the 15th. The mean daily duration of bright sunshine was 3.2 hours. The mean earth-temperatures were—at 1 ft., 40.7° ; at 4 ft., 42.4° . The one-foot thermometer ranged between 36.2° on the 1st and 44.1° on the 7th. The four-feet thermometer ranged from 41.3° on the 2nd to 43.5° on the 24th.

The rainfall at Leeson Park, Dublin, is given by Dr. C. Joynt, F.R.C.P.I., as 4.015 inches on 24 days, .880 inch having been measured on the 18th and .690 inch on the 20th.

At the Ordnance Survey Office, Phoenix Park, the rainfall was 2.777 inches on 26 days, the maximal measurement in 24 hours being .600 inch on the 18th. The total amount of sunshine was 109.4 hours, the greatest daily duration being 9.7 hours on the 23rd.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 23 days to the amount of 4.82 inches, the greatest daily fall being .85 inch on the 18th. In February, 1901, the rainfall was 1.55 inches on 10 days; in 1902, it was 2.76 inches on 11 days; in 1903, 2.95 inches on 15 days; in 1904, 4.05 inches on 21 days; in 1905, 1.07 inches on 12 days; in 1906, 2.03 inches on 18 days; in 1907, 1.29 inches on 13 days; in 1908, 1.16 inches on 20 days, and in 1909, .64 inch on 8 days. The temperature in the shade ranged from 54° on the 5th and 6th to 33° on the 22nd. The mean temperature in the screen was 42.6° , compared with 32.0° in 1902, 47.1° in 1903, 40.4° in 1904, 43.6° in 1905, 39.6° in 1906, 39.6° in 1907, 44.9° in 1908, and 42.2° in 1909. Hail showers fell on the 15th, 21st, 25th and 26th. Thunder and lightning occurred on the 21st.

Mrs. George B. Symes recorded a rainfall of 3.51 inches on 24

days at Druid Lodge, Killiney, Co. Dublin. The maximum in 24 hours was .70 inch on the 18th. The average rainfall for February at Killiney in the 24 years, 1885-1908, inclusive, was 1.752 inches on 14.2 days.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall was 2.900 inches on 19 days. The heaviest fall in 24 hours was .380 inch on the 20th.

At the Royal National Hospital for Consumption for Ireland, Newcastle, Co. Wicklow, Dr. Launcelot T. Burra measured 4.32 inches of rain on 25 days, the largest daily measurement being .72 inch on the 18th. The mean temperature at the Hospital was 41.7° , the extremes being—highest, 57.1° on the 6th; lowest, 29.0° on the 23rd. The mean maximum was 47.3° , the mean minimum, 36.0° .

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 2.945 inches on 24 days. The greatest fall in 24 hours was .675 inch on the 20th. The mean shade temperature was 38.5° , the extremes being—highest, 51.5° , on the 7th; lowest, 26.0° , on the 3rd.

The Rev. Arthur Wilson, M.A., returns the rainfall at the Rectory, Dunmanway, Co. Cork, at 8.98 inches on 27 days, the greatest fall in 24 hours being .93 inch on the 20th. The rainfall on the 18th was .73 inch, and that on the 19th was .69 inch. The total precipitation was more than double the average for February. There was a terrific storm on the afternoon of the 20th, especially from 4 to 7 p.m. The rainfall in 1910 to February 28 amounted to 15.41 inches.

In the City of Cork, Mr. William Miller registered 5.42 inches of rain on 26 days, the largest measurement in 24 hours being .74 inch on the 18th. The rainfall was 2.25 inches above the average. During the first two months of 1910 the rainfall was 8.21 inches, or .84 inch above the average. The thermometer in the screen rose to 53° on the 6th, and fell to 27° on the 1st. The mean temperature was 39.0° , or 3.4° below the average for the month in 25 years.

Mr. William Holbrow reports that at Derreen, Kenmare, Co. Kerry, the large amount of 12.40 inches of rain was measured on 28 days. The heaviest falls were .98 inch on the 5th, 1.01 inches on the 14th, 1.15 inches on the 18th, 1.33 inches (the maximum for the month) on the 20th, and 1.25 inches on the 22nd. It was a rough, stormy month, with gales, hail, snow, and thunder. Thick fog prevailed on the 5th and 6th.

PERISCOPE.

THE DUBLIN HOSPITALS' TUBERCULOSIS COMMITTEE.

THE Second Annual Meeting of the Committee was held on Friday, March 11, 1910. Reports were read from Dr. Joseph F. Daniel, the Tuberculosis Nurses of the City and Rathgar and Terenure Districts, Nurse O'Brien, and Mrs. A. M. Sullivan, Chairman of the Samaritan Committee of the Women's National Health Association of Ireland. These Reports were received and entered on the Minutes. The following is a summary of the work done by two Tuberculosis District Nurses in Dublin during twelve months ended February 19, 1910:—

No. of cases attended—125 old cases, 207 new cases - 332

Of these 60 died; the remainder are under treatment, or have been dealt with as follows:—

„	visits paid	-	-	-	-	-	6,786
„	average weekly attendances	-	-	-	-	-	130
„	cases notified from hospital	-	-	-	-	-	79
„	„ otherwise	-	-	-	-	-	128
„	„ improved so much that they were able to return to work again	-	-	-	-	-	18
„	„ sent to the Royal National Hospital, Newcastle, Co. Wicklow	-	-	-	-	-	19
„	„ waiting to be admitted to Newcastle Hospital	-	-	-	-	-	1
„	„ sent to other Sanatoriums	-	-	-	-	-	6
„	„ gone or sent to friends in the country	-	-	-	-	-	13
„	„ sent to South Dublin Union for special tuberculosis treatment	-	-	-	-	-	20
„	„ admitted to North Dublin Union Hospital	-	-	-	-	-	12
„	„ „ to South Dublin Union Hospital	-	-	-	-	-	8
„	„ „ to the Hospices for the Dying	-	-	-	-	-	27
„	„ attended who have been at Newcastle Hospital	-	-	-	-	-	19
„	deaths at patients' home	-	-	-	-	-	28
„	„ in institutions	-	-	-	-	-	32
„	families removed to more healthy homes	-	-	-	-	-	10
„	rooms disinfected	-	-	-	-	-	108
„	insanitary houses reported	-	-	-	-	-	13
„	sputum flasks distributed	-	-	-	-	-	49

No. of families who received nourishment -	-	-	107
„ patients who received clothes, shoes, bedding, &c. -			98
„ families for whom rent is being paid while the breadwinner is at Newcastle Hospital or in the Dublin Unions -	-	-	17
„ children of parents suffering from tuberculosis sent to the country through the Fresh Air Fund -	-	-	89
„ „ boarded out while the mother is in hospital			5
„ patients or their families for whom work has been obtained -	-	-	16
„ children sent to schools or institutions after parents' death -	-	-	2
„ each family, rough average -	-	-	6
„ families occupying one room -	-	-	114
„ „ in which more than one person are affected			70
Average weekly income	-	-	14/6
Average weekly income when breadwinner is ill -	-	-	4/-

THE SIXTEENTH INTERNATIONAL MEDICAL CONGRESS.

THE General Secretary of the Sixteenth International Medical Congress, which was held at Budapest from the 29th of August to the 4th of September, 1909, notifies us that the members of the Congress will receive their copies of the General Report during the course of the month of April. In accordance with the terms of the Congress Regulations, every member thereof will receive a copy of the General Volume as well as of that of the Section in which he was inscribed. Besides these publications, there will be a copy of the work on the Protection of Child-life in Hungary, kindly presented to each Congressist by the Royal Hungarian Minister of the Interior.

LITERARY NOTE.

MR. H. J. GLAISHER, of Wigmore Street, London, has nearly ready for publication "Mind and Health, the Mental Factor in Treatment, with special reference to Neurasthenia, &c." by Edwin Ash, M.D. Lond. The price will be 2s. 6d. net.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

MAY 2, 1910.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XII.—*A Case of Spleno-medullary Leukæmia treated by X-rays.*^a By MAURICE R. J. HAYES, F.R.C.S.I.: Medical Officer in Charge of the Electrical and X-ray Department, Mater Misericordie Hospital; Assistant Professor of Materia Medica, University College, Dublin.

CASE.—M. A. M.E., aged forty-two; occupation, housewife; married; no children.

History of Present Disease.—In December, 1908, she first noticed a hard swelling in the left side of her abdomen below her ribs, and her sides and back became sore and tender; the soreness was so great that she could not bear the pressure of her clothes. Early in February, 1909, her abdomen got so large that her clothes did not fit. At this time her colour assumed a lemon-yellow tint, and she was weak and breathless on exertion. She now also suffered a great deal from headaches, dizziness, and constipation, and her vision was cloudy. She rapidly lost flesh, and her feet used to swell, especially at night. She also noticed blotches.

^a Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, November 26, 1909. [For the discussion on this paper see the number of the Journal for January, 1910, Vol. 129, No. 457, page 56.]

bluish in colour, on her hips and hands; these were very tender to the touch, and they came and went irregularly, remaining for varying intervals; at times she was quite free from them. She never had any hæmorrhage.

Previous History.—She was always healthy, but anæmic. In 1901 she was treated by Dr. Robert Farnan, in the Mater Misericordiæ Hospital, for a retroverted uterus (curetting, replacement, and pessary).

In August, 1906, she suffered from an attack of what was called acute rheumatism, when she was confined to bed for three months, but her joints were never painful.

In January, 1907, she was re-admitted to the Mater Hospital complaining of pain in her back and down her legs. She had some pains in her arms, and while in hospital she developed a purpuric rash. She had a left femoral hernia, and was very anæmic. The pessary, which was inserted in 1901, had been dispensed with for some years, and the uterine displacement recurred, for which she was again treated as before. No operative treatment was ever deemed advisable to rectify this condition on account of the very anæmic state of the patient. The pains in her legs did not respond to anti-rheumatic remedies, but they greatly improved under the administration of arsenic. Sometimes her temperature was slightly elevated at night— 99.5° or 100° —at other times it was quite normal. Urine normal. There was some frequency of micturition, but this was removed by replacement of the uterus. Since her girlhood she had always suffered from dysmenorrhœa and anæmia—the former was relieved by the replacement of her uterus in 1901. Menstruation was regular until December, 1908. She was unwell once in February and once in May, 1909. She has menstruated regularly since May, except that she missed one period in October.

Family History.—Mother alive and healthy. Father died of cancer of the stomach, aged fifty. She has one brother and one sister alive and healthy. Two brothers and two sisters died in infancy from whooping-cough and measles.

Condition in February, 1909.—Anæmia well marked; there is a yellowish tinge in her skin, and she is grey and wasted. She suffers very much from breathlessness and palpitation; there is swelling about her legs, and she has hæmic murmurs. Her spleen is greatly enlarged, and it extends on the right side for two inches beyond the middle line, and its lower limit to about three inches

below the umbilicus and to the crest of the left ilium. It is very hard in consistence, and its lower and anterior margins can be distinctly felt through the abdominal wall. Liver but very slightly enlarged, and there are no enlarged lymph glands. The blood count on February 15, 1909, was as given below (see Table I.).

Treatment.—At Dr. Farnan's request I began X-ray treatment on February 20, 1909, and I may here remark that from that time till now she has had no medicinal treatment whatever for leukaemia, nor is she taking any drug at present.

For purposes of treatment I divided the surface of the abdomen over the enlarged spleen into four circular areas, each having a diameter of ten centimetres. These areas I shall name as follow :—“ The lower anterior,” “ the upper anterior,” “ the left epigastric,” and “ the mid-axillary,” over the ninth, tenth and eleventh ribs in the mid-axillary line. Each of these areas, beginning at the lower anterior, was irradiated consecutively in the order in which they are given, the cycle beginning at “ the lower anterior.” A hard tube enclosed in a shield opaque to the rays, with a diaphragm of 10 centimetres in diameter, having an alternative spark-gap of 4 to 5 inches, was used, with .5 milliampère going through the tube; the average duration of the exposures given was $18\frac{1}{2}$ minutes (*i.e.*, 1 Sabourand = 4 to 5 H of Holzknecht's scale); the distance of the anode from the skin was 20 centimetres. No filter was used to protect the skin from the softer rays in the earlier exposures, but later on I used felt, and at present I am employing thick cow-hide (sole leather) for this purpose.

On February 20th the lower and upper anterior areas were irradiated separately, each getting an exposure of 15 minutes. No constitutional disturbance having occurred after these exposures, save a slight rise in temperature, to which I shall refer later, on February 26th an exposure of 15 minutes was again given over the left epigastric region. An examination of the blood on March 1 is given below (*vide* Table II.).

It will be noticed that there is an increase in the number of white cells present. This phenomenon has been noted at the beginning of X-ray treatment in leukaemia (1).

On March 4th a 15 minutes' dose was given over the “ mid-axillary area.”

On March 6th, 18 minutes over the “ lower anterior area.”

On March 8th, 18 minutes over the "upper anterior area."

On March 11th, the same exposure over the "left epigastric area."

March 16th, the same over the "mid-axillary area."

19th, the same over the "lower anterior area."

23rd, the same over the "upper anterior area."

The patient had now, within thirty-one days, received ten X-ray exposures—4 of 15 and 6 of 18 minutes duration—in the manner I have described. She developed no unpleasant symptoms of any kind, and she had no dermatitis. Considering the vigorous X-ray treatment she had received this was to me very encouraging, more especially as her general condition began to improve. Her statement that she was feeling much better was verified by the report from the Pathological Laboratory, which gave her blood count as given below (Table III., March 23rd).

On March 30th she had an exposure of 18 minutes over the "left epigastric area."

On April 2nd there was well-marked pigmentation over all the exposed parts, more especially over the "mid-axillary area," which was irradiated on 4th and 16th (15 minutes each), and, lest I might cause a dermatitis, I deferred irradiating this area for a little while longer, so I exposed the surface corresponding in size immediately behind it, when I gave 18 minutes. In a day or two a slight erythema developed over the four named areas, which lasted a few days, but caused no inconvenience to the patient, nevertheless I considered it safer to discontinue X-ray treatment for the present.

On the 5th of April her blood count was as given below (*vide* Table IV.).

Despite the fact that irradiation was now suspended her condition continued to improve, as will be seen from the report appended, which was on a specimen of blood examined on April 24th (*vide* Table V.).

On April 27th the spleen was very much reduced in size, and her condition was much improved, and all traces of dermatitis had disappeared; I again gave a 20 minutes' dose over the lowest part of the spleen in front, but protecting the skin by means of felt—a procedure first suggested by Dr. Ironside Bruce, of Charing Cross Hospital (2).

On May 4th she got an exposure of 21 minutes over the "left epigastric area."

May 7th, 20 minutes to "mid-axillary area."

May 15th, 20 minutes to "upper anterior area."

May 18th, 20 minutes, "left epigastric area."

The patient now left hospital, and the improvement noted in March had continued, and her spleen was considerably smaller, extending only for about $2\frac{1}{2}$ inches below the left costal arch. As directed, she returned for treatment on June 20th, when she looked well and had put on flesh. Her spleen continued to reduce in size, and now it was not quite an inch below the rib cartilages. It had also receded from the anterior abdominal wall, and, as it was freely movable, it could be pushed up beneath the margin of the lower ribs.

The condition of her blood on June 21st is given below (*vide* Table VI.).

On June 23rd she received 20 minutes exposure, and she went home to the country the following day.

On November 11th she again returned for treatment, and she declared that during July and August she felt that nothing whatever was the matter with her. In October she had slight discomfort in her left side, and during the first ten days in November she at times felt a slight inclination to vomit. This gastric disturbance has now passed off, but her appetite is less. Her spleen is larger than when she left hospital in June, but it is freely movable. The fingers can be pressed into the abdomen above it, and it can be pressed up beneath the ribs, leaving about 3 inches of its anterior surface to be palpated below the costal arch.

An examination of her blood on November 15th is given below (*vide* Table VII.).

On November 11th she had an X-ray exposure of 20 minutes over the lower and anterior surface of spleen in the umbilical region, with thick leather protecting the skin.

On November 15th she had an exposure of the same duration over the upper and inner surfaces of the spleen.

On 18th, 20 minutes over an area immediately external to the part last exposed.

As menstruation came on on the 21st inst. treatment was discontinued until the 25th, when she had an exposure of 20 minutes over the mid-axillary area."

Summary.—Since February 20th she received twenty-two exposures over the splenic area, the average duration of each

being $18\frac{1}{2}$ minutes. Her red blood cells had increased from 3,100,000 on February 15th to 5,072,000 on June 21st; they dropped again, in the absence of treatment, in July, August, September and October, to 3,488,000 on November 15th. The percentage of hæmoglobin increased from 60 per cent. on February 15th to 75 per cent. on June 21st, and to 77 per cent. on November 11th; the white cells diminished from 566,000 on February 15th to 36,000 on June 21st, and had increased again to 168,750 on November 11th.

The diminution in white corpuscles was chiefly in the mononuclear cells—the polynuclear cells increasing from 32.7 per cent. to 60 per cent., and the nucleated reds disappearing, as compared with the differential count first made on February 15th.

There were never any ill effects from X-ray treatment, save the very slight erythema which appeared in April; she at no time suffered from any constitutional disturbance as the result of irradiation, but I noted that for a day or two after each exposure she had a slight rise in temperature, but this never amounted to more than half a degree.

A pyrexial condition associated with severe constitutional disturbance has been frequently noted in treating these cases, and it has been attributed to the circulation of toxins in the blood due to the disintegration of large numbers of white cells.

The division of the superficial area of the enlarged spleen into several spaces, and irradiating each space so marked out in turn at short intervals, was an experiment, and as it worked well in this case I intend to follow it in the future. It has the advantage that the spleen itself can be exposed to the cross-fire of the X-rays from various angles, so that the skin in any one part will get only a fractional amount of the entire irradiation, thereby diminishing very appreciably the risk of causing a dermatitis and increasing the quantity of X-rays applied to the underlying spleen.

The prognosis of leukæmia when treated by the X-ray is perhaps better than with other therapeutic agents.

Radiotherapy is more costly than other methods of

treatment and not dangerous when carefully and judiciously applied, and the response to it is certainly rapid. There is a sense of well-being from the earliest stages of the treatment which is scarcely attributable to the mental effect on the patient of the elaborate apparatus which must be employed. Relief from the distressing symptoms is obtained very early, but the outlook as regards absolute cure is still gloomy. In the literature on the subject few, if any, permanent cures are recorded—recurrences on the suspension of treatment are the rule, and this case is not an exception. Even some recurrent cases have not responded to resumed and active X-ray treatment.

In conclusion I must express my thanks to Dr. Farnan for placing his notes of the patient's case at my disposal, as well as for permitting me to bring this case before this Academy, and I have pleasure also in expressing my indebtedness to Professor McWeeney and Dr. W. D. O'Kelly for their exhaustive reports on the different blood-films.

TABLE I.—15th February, 1909.

Reds, 3,100,000.

Hæmoglobin, 60 per cent. Reds to Whites, 5.5.1.

Whites, 566,000.

Differential count—	per cent.
Polymorphonuclear . . .	32.7
Transit. Polymorphs. . .	14.5
Myelocytes (Neutr.) . . .	20.0
Myelocytes (Eosinophile) . .	0.9
Broken cells . . .	5.4
Hyaline cells . . .	7.2
Large Lymphocytes . . .	9.9
Small Lymphocytes . . .	0.9
Mast cells . . .	9.9
Normoblasts seen . . .	1.0.

TABLE II.—1st March, 1909.

Whites, 704,400.

In this case the leucocytes were too numerous and too varied to make a differential count with accuracy.

General Statement of Leucocytes and Red Cells in Film Preparations.—A large number of megaloblasts are seen, often with nucleus partly extruded. An occasional normoblast with dividing nucleus is seen. The majority of the leucocytes are myelocytes, every variety being represented. The commonest form is a very large cell with minute, scarcely visible, basophilic granulation, or perhaps devoid of granulations, but with a more deeply basophilic ring at periphery of protoplasm. Next to these in frequency come moderate-sized mast cells with very large, often angular, granules, and a nucleus which hardly stains at all. Myelocytes with undoubted neutrophilic granules are not nearly so numerous, and eosinophilic myelocytes, although much more frequent than on last occasion, are decidedly the least common. Polynuclears make up the vast majority of the ordinary leucocytes, whilst lymphocytes seem to be absent. In addition to the polynuclears the ordinary leucocytes are made up of vast numbers of mast cells, and a smaller number of eosinophiles. Punctate basophilia is common in the red cells.

TABLE III.—23rd March, 1909.

Reds, 3,528,000.

Hæmoglobin, 63 per cent.

Whites, 209,333.

Differential count—

per cent.

Polymorphonuclears . . . 46

Broken-down cells . . . 17

Transitional cells . . . 17

Myelocytes (Neutrophiles) . . . 10

Hyaline cells . . . 3

Lymphocytes . . . 2

Eosinophiles . . . 2

Mast cells . . . 1

Megaloblast, 1 in every 100 white cells counted.

Normoblast „ „ „

TABLE IV.—5th April, 1909.

Reds, 4,368,000.

Hæmoglobin, 58 per cent.

Whites, 197,000.

Differential count—	per cent.
Polymorphonuclears . . .	42.0
Transitional cells . . .	17.0
Myelocytes (Neutr.) . . .	17.0
Eosinophiles . . .	7.2
Mast cells . . .	6.0
Lymphocytes . . .	5.0
Hyaline cells . . .	3.2
Broken down cells . . .	2.2
Myelocytes (Eosinophiles) . .	0.4.

Three normoblasts were seen during the count. The lymphocytes were of the large or medium-sized variety. There were cells with coarse granules, partly basic and partly eosinophilic. These were included with the mast cells. Only those cells with granules of undoubted eosinophilic tinge were classed as eosinophiles.

TABLE V.—*24th April, 1909.*

Reds, 4,224,000. One normoblast seen. Some micro and megalocytes present. Basophilic degeneration was also seen.

Hæmoglobin, 63 per cent.

Whites, 172,000.

Differential count—	per cent.
Polynuclears . . .	40.0
Transitional cells . . .	19.0
Lymphocytes (large) . . .	11.3
Myelocytes (Neutr.) . . .	7.3
Broken-down cells . . .	7.3
Mast cells . . .	6.6
Eosinophiles . . .	3.3
Parent cells (Schleip) . . .	2.0
Hyaline cells . . .	2.0
Lymphocytes (small) . . .	0.6.

N.B.—For the differential counts Leishman's stain was used throughout.

TABLE VI.—*21st June, 1909.*

Reds, 5,072,000. No nucleated reds were seen. Some anisocytosis was present.

Hæmoglobin, 75 per cent.

Whites, 36,000.

Differential count—	per cent.
Polymorphonuclears . . .	60
^a Lymphocytes (small) . . .	10
Transitional cells . . .	9
Neutrophile Myelocytes . . .	8
Mast cells	8
Lymphocytes (large) . . .	4
Eosinophile Myelocytes . . .	1.

TABLE VII.—15th November, 1909.

Reds, 3,488,000. Some anisocytosis, no "blasts." seen.

Hæmoglobin, 77 per cent.

Whites, 168,750.

Differential count—	per cent.
Polymorphs.	53.3
Transit.	6.6
Large lymphos.	6.6
Small „	2.8
Eosinophiles	2.3
Mast cells	10.0
Hyaline	2.8
Neutr. Myelocytes	14.3
Eosinophile „	0.4.

NOTE.—Patient returned to hospital on March 4th, 1910. She was quite well till February 1st, when the spleen again began to enlarge. On examination the spleen was very hard, and it filled the left side of abdomen, and extended beyond the middle line towards the right iliac fossa. Patient was very anæmic, and complained of severe pains in her legs and back, and her breathing was much distressed. Despite regular and active irradiation she got gradually worse, and died on her way home April 4th, 1910.

REFERENCES.

- (1) Medical Electricity. Lewis Jones. P. 367.
- (2) Proceedings of Royal Society of Medicine. February, 1908.

^a Compare previous counts.

ART. XIII.—*Glycosuria and Graves's Disease.*^a By WILLIAM A. WINTER, M.D. Dubl.; F.R.C.P.I.; Physician to Steevens' Hospital, Dublin.

THE subject of glycosuria and Graves's disease has recently been brought before this Section in a comprehensive manner by Dr. Drury. It is, therefore, not my intention to again go over the ground so recently covered by him, but merely to record a clinical case, in order to emphasise the important subject he brought before us.

M. K., a married woman, was sent into Steevens' Hospital last month by Dr. Atock, and was placed under my care: she is a well-preserved woman, fifty-nine years of age, and on admission weighed 9 stone 7 lbs. She appears to be fairly well nourished, but states that during the last few months she has lost a good deal of flesh. Her family history is good, and her personal history excellent. She states that she has never been ill, unless, indeed, one can class the fact that she has been fourteen times pregnant under that heading. She has eight children alive; one of her daughters has goitre, and a brother is also affected with the same disease. The history of her present illness is that six months ago she commenced to suffer from excessive thirst and large appetite. She also noted that she was passing a large quantity of urine and was getting thin. On examination I found that her heart and lungs appeared to be healthy, her temperature was normal, and her pulse 76. I noticed that her eyes were prominent, and when I was examining her thyroid she volunteered the statement that she had had a goitre, but it had got well nine years ago. She also told me that at that time she was rather troubled by palpitation, and that the goitre used to swell when she was pregnant, and became much smaller again after her confinement, and that it finally got well, without any treatment, nine years ago. Her recovery does not coincide with this menopause, as she menstruated within the last year. I referred the above statements to Dr. Atock, who tells me that he remembers the woman ten or fifteen years ago as a well-marked case of exophthalmic goitre. On admission to hospital the

^a Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, March 18, 1910.

urine showed all the characters found in diabetes, the specific gravity being 1050, the total quantity being from 80 to 120 ounces, and the first examination gave 6.5 per cent. of sugar; there was no albumen and no diacetic acid. At present there are no symptoms of Graves's disease, except her rather prominent eyes, and her diabetic symptoms have improved under treatment, the specific gravity of the urine being 1040 and under, the total quantity being 40 to 60 ounces, and the last estimation of the sugar by my colleague, Dr. Rowlette, gave a percentage of 2.5.

The time that has elapsed since her goître got well is of interest. In the recorded cases the interval between the onset of the diabetes has been quite short in some cases, while in one recorded by Dr. Murray in the *Clinical Journal* of July 28, 1909, the diabetes did not appear for more than ten years after the Graves's disease has been under treatment.

As I did not see this patient when the goître was present I cannot be absolutely certain that she suffered from that disease. Tachycardia does not seem to have been a prominent symptom with her, but we are familiar with the variability of the cardinal symptoms of this disease, and I think that taking her statements, verified as they are by Dr. Atock, I am justified in considering the case to be one of diabetes following on Graves's disease.

ART. XIV.—*A New Pancreatic Extract for the Treatment of Diabetes.* By W. M. CROFTON, M.B. R.U.I.;
Lecturer in Special Pathology, University College,
Dublin.

In a previous report (*Lancet*, Feb. 27, 1909) of the successful treatment of a case of severe glycosuria (diabetes) with a pancreatic extract containing all the products of the gland, the conclusion was arrived at, on physiological, pathological, and clinical grounds, that the disease was due to the failure of the pancreas to produce a substance essential to carbohydrate metabolism, which we suppose to be an internal secretion of the gland. The failure of other observers to get good results was put down either to

the internal secretion in the extracts used being destroyed by the secretions of the stomach or to its being deficient in them. If this hypothesis was correct an extract of the pancreas from which the external secretions, trypsin, amyllopsin, and steapsin were removed ought to contain this internal secretion and ought to give clinical results as good or better than the "whole" extract.

In the following case, briefly recorded, such proved to be the case, and, further, the extract was given in liquid form and in no way protected from the digestive juices of the stomach. The extract was made for me by the same makers as the "whole" extract, and was carefully tested before use for any action on protein carbohydrate and fat. It is a clear, straw-coloured liquid, with a not disagreeable taste, and will keep for a long time if kept in a cool place. Some attempt at specific treatment of the disease in this case was made with a vaccine prepared from a streptococcus isolated in practically pure culture from the patient's throat during a relapse.

CASE.—Mrs. M., aged sixty-nine; first seen 7th October, 1908; very fat; had been suffering for months with thirst, hunger, great frequency of micturition (this symptom she had had for years) and severe pruritus, loss of flesh and a sinking feeling, and some slight pain in the epigastrium and to the left of it. Her normal weight was 13 stone.

Condition on Examination.—Patient very weak and breathless, and confined to bed. Her tongue was very dirty, her breath smelled sweet, her legs were œdematous, she had tenderness on pressure in the epigastrium and left hypochondrium. She was passing about three pints of urine in the twenty-four hours, containing 3 per cent. sugar, albumen and tube casts. Her stools were not obviously fatty. I gave her liq. arsenicalis for some time, which cleared up the pruritus. Her diet was not altered.

On October 24th she passed three pints of urine containing 4 per cent. of dextrose, and was put on four capsules of the "whole" extract of the pancreas daily. She was able to get up after a week, and felt much stronger; she then weighed 12 stone, was passing five pints of urine containing 5 per cent. of sugar.

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her legs were no longer œdematous, she was not so thirsty, and her tongue much cleaner. She was so much better I stopped the "whole" extract and gave her secretin. She became weaker so rapidly—the hunger and thirst returning—that, after a few days, I gave her the "whole" extract again, when she rapidly regained her lost ground. She maintained this satisfactory condition, and was able to do a little housework, although sometimes experiencing the sinking feeling, and her weight slowly became reduced to 11 stone.

On February 15, 1909, when I received the internal secretion, she was then passing four to six pints of urine daily, containing 5 to 6 per cent. of sugar. The new extract given, one drachm four times a day after food, acted even better than the "whole" extract, and she began to feel quite herself again, and gained 2 lbs. in weight the first week; her strength gradually increased till March 17th, when she relapsed, with tenderness in the epigastrium and left hypochondrium, the urine increasing to seven pints. She felt exhausted, and her thirst increased; this may have been due to having to reduce the daily quantum of extract to two drachms, as it was running short, pending the arrival of another supply. I then (March 22nd) gave her the extract, one drachm intramuscularly, morning and evening till April 1st, when the supply ran out. This method acted as well as the oral administration, but she was obviously not getting enough. She then took the whole extract till April 6th; the change did not affect the amount of urine or percentage of sugar, but she did not feel quite so well as when she was taking only two drachms of the internal secretion, although she was having four capsules daily of the "whole" extract. She was more easily exhausted.

On April 7th a further supply arrived, and she soon began to feel better again, although she was still slowly losing weight.

On May 1st she had another relapse, accompanying a sore throat, from which I isolated a streptococcus in almost pure culture.

On May 30th, when she had recovered from the relapse, I gave her "50 millions" of a vaccine made from this streptococcus. She then weighed 11 stone, was passing five and a half pints of urine, with 6 per cent. of sugar, daily.

On June 1st the amount of urine was five and a half pints, with 7 per cent. of sugar; June 2nd, seven pints, with 7 per cent. of sugar; June 4th, six pints, with 6.6 per cent. of sugar; June 12th, five pints, with 6.2 per cent. of sugar; June 20th, five and a half

pints, with 5.5 per cent. of sugar, and there had been no loss of weight; on this date she was given 100 million dose of vaccine. This was followed on June 21st by an increase of sugar to 6.8 per cent., which reduced to 5.3 per cent. on the 22nd.

On June 29th her weight had increased to 11 stone 2 lbs.

On July 4th she was given 200 millions vaccine, which was followed as before by a small increase of the daily amount of urine and percentage of sugar.

On July 20th she weighed 11 stone 2 lbs., passed five and a half pints of urine, containing 5.1 per cent. of sugar, and was given 400 millions of vaccine. She felt very seedy and exhausted after this injection, the amount of urine and percentage of sugar increasing to a small extent for a day or two as before, and her weight had reduced to 11 stone.

On August 2nd, however, she had recovered her feeling of well-being. Her weight gradually reduced during August to 10 stone 8 lbs., although she was feeling so well, but since then she had not lost weight, and does her household work in quite a normal way. She now (January 6th) weighs 10 stone 8 lbs., passes four to five and a half pints in twenty-four hours, which contains 3.8 per cent. sugar.

The increase in the amount of urine and percentage of sugar early in the treatment is probably accounted for by the recovery of their functions by the kidneys, accompanied as it was by the disappearance of the oedema from her legs. The present abnormal amount is also partly due to the renal condition. The increase of strength under the influence of the whole extract was very marked, and the further increase when this was changed to the "internal" secretion was quite as noticeable. She undoubtedly improved in strength after the inoculations with the autogenous vaccine, although the last injection was, perhaps, too sudden an increase. It is impossible to say, of course, whether or not the pancreatic lesion was streptococcal in origin, although the fact that the negative phase after an inoculation was reflected in the urine has a certain significance, and it is interesting to note that in this case, as in the one previously reported, a relapse was accompanied by a sore throat and slight pain and tender-

ness in the epigastrium and left hypochondrium. I believe the latter symptoms are of special significance, and can nearly always be elicited in this acute type of the disease. The continuous loss of weight while she was gaining in strength was possibly a return to the normal, pointing to an increased power of the tissues to oxidise carbohydrates. As to the nature of the internal secretion it is impossible to speak at present, its presence in the extract used being inferred only from the fact that the latter gives the patient an increased power of oxidising carbohydrates.

I should like to emphasise the fact that the usual amount of carbohydrates has been taken by the patient throughout.

The girl whose case was reported in February, 1909, has had no treatment since January, 1909. She was, at the time of writing (December, 1909), passing two and a half to three pints of urine daily, containing $3\frac{1}{2}$ per cent. sugar.

She died towards the end of January, 1910, without treatment. Her parents were warned that she might at any time relapse, and that provision was made for the treatment. They did not send for the doctor till she was quite unconscious.

The extract used in the case now reported consists of the expressed juice of fresh pig's pancreas. The juice is kept heated for three hours at 80°C . (176°F .) to precipitate all proteins and to destroy all ferments. The filtrate is then mixed with 25 per cent. of glycerine.

I hope to be able to work out the subject fully. The cases treated up to the present have been observed under great difficulties, and, therefore, rather empirically.

ART. XV.—*The History of the Prevention of Small-pox.*^a

By T. PERCY C. KIRKPATRICK, M.D., F.R.C.P.I.;
Physician to Steevens' Hospital.

THE early history of small-pox is involved in great obscurity, and since the time of Rhazes in the tenth century medical historians have disputed as to both the date and place of its origin. The most generally accepted opinion is that the disease was introduced into Europe by the followers of Mahomet, and tradition dates its origin from the celebrated "War of the Elephant," which took place in the year of the birth of the Prophet, or 569 of our era. The war of the elephant was a religious war of great celebrity in Arabia. Abrahah, an Abyssinian prince and a Christian, built a magnificent church at Sanaa with the idea of attracting to it the Arabian pilgrims from their worship at Mecca. The inhabitants of Mecca secretly defiled this church, and so enraged Abrahah that he determined to destroy the temple at Mecca. In order to effect this purpose he raised a great army, and, mounted on a large elephant, marched on Mecca. The town was in a state of helplessness and its destruction seemed certain, but the story goes that when Abrahah attempted to enter the city the elephant knelt down, then turned round, and refused to advance. At the same time a flock of supernatural birds came flying in from the sea. These birds were black and green in colour, and had white and yellow bills: each of them carried a stone about the size of a pea in its bill and one in each claw. These stones the birds dropped on the heads of the soldiers of Abrahah's army; the stones pierced the helmets of the soldiers and destroyed the entire army. Other accounts attribute the destruction of the Abyssinian army to a new pestilence, called small-pox, which from that time forward spread over northern Africa, and from there to Europe. In historical times

^a Read before the Section of State Medicine in the Royal Academy of Medicine in Ireland on Friday, April 15, 1910.

the fate of armies has more than once been decided by disease rather than by battle, and it is quite probable that the defenceless Mecca was saved in this way, and that the story of the birds was afterwards invented for the edification of the faithful. One must remember, however, that in mediæval times the Christians of Europe were not loath to attribute one of the most pestilential of diseases to the malign influence of the followers of the Prophet.

That small-pox first visited the Western Empire about this time is borne out by the fact that the earliest known work on the disease was written by a physician of Alexandria, Ahron, who lived during the lifetime of the Prophet in the early part of the seventh century. No copy of this work is now known to exist, but extracts from it have been preserved for us in the writings of Rhazes.

We have, however, records of small-pox much earlier in both India and China. The Hindoo records indicate the existence of the disease in that country from very early times. There are names for the disease in the ancient Sanscrit, and the goddess of small-pox was worshipped under various names all over the country. Various names are given to this goddess, such as Mariatali and Patragali, and different explanations of her origin and power are given in the Hindoo mythologies. The treatment of patients affected with the disease was left to the goddess, who was invoked by prayers and offerings, and to the Brahmins of her temple. These priests used a form of inoculation and a certain form of prayer, and the secret of their treatment was hereditary and closely kept. There is evidence that the disease was looked on with much dread, and the power of the goddess was greatly respected. There is a picture of one of the forms of this deity given as a frontispiece in James Moore's history of small-pox. The goddess, a huge figure, stands with a crooked dagger in each hand, uplifted and ready to strike on both sides. Before her stand a body of armed warriors ready to execute her

vengeance. The two in the background wear red masks, carry black shields, and brandish naked scimitars. The lines radiating from the others are supposed to indicate the infection. Further off is a group of men with spotted bodies, waving black feathers, and with bells hung to their belts, carrying with them infection and death. The other group, carrying musical instruments, is supposed to be supplicating the mercy of the goddess, while the women behind her carry baskets of offerings on their heads as a thanksgiving for their lives and beauty saved. The small child taking something from the right arm of the goddess is supposed to be emblematic of inoculation.

Small-pox raged for many centuries in India, though in the sixteenth and seventeenth it was said to be so rare on parts of the coast that the Portuguese sailors were accused of introducing it into the country.

In China small-pox has been known from at least the third century B.C., and it was said to have been introduced into that country from Central Asia. Inoculation has been in use from 590 A.D., and is known as "sowing the small-pox," from the custom of introducing crusts from the small-pox pustules into the nose, and so infecting the patient from a favourable case. The Chinese also worship a goddess of small-pox. There is a record of an epidemic of small-pox in Japan in the middle of the eighth century of our era, and Dr. Engelbert Kaempfer, physician to the Dutch Embassy in Japan, writing in 1690, states that both small-pox and measles were then diffused throughout the country.

In Thibet small-pox seems to have been present from very early times, and was greatly feared by the people. Captain Turner, Ambassador to the Tishoo Lama, writing in 1800, points out the very effectual way in which the people of that country dealt with outbreaks of the disease. When a case of small-pox was discovered the strictest isolation was enforced, the house and its inhabitants were shut up and all communication was cut off.

even though this might entail the death of the people from starvation, and the house or village was afterwards destroyed. When small-pox broke out in the capital the Tishoo Lama left the place, and it was abandoned for three years without inhabitants till infection was considered to have died out. At the time of Captain Turner's visit it is stated that small-pox was seldom met with in Thibet, and when it did occur its progress was checked by the terror and vigilance of the inhabitants.

The evidence at our disposal would seem to suggest that Central Asia and possibly Central Africa were the original homes of small-pox, and that it has spread thence to the rest of the world. That it did not spread earlier need cause no surprise when we remember the great difficulty in communication between distant countries in those early days, and the time it took to get from one to the other. If infection did occur on board the ships of those early travellers it had ample time to die out before they reached home, and we can well believe that there was little hesitation in abandoning a patient who was known to suffer from an infectious disease. It is certain at all events that there is no definite mention of the disease in the works of the Greek medical writers that have come down to us. It is possible, though unlikely, that the plague of Athens, described by Herodotus, was the small-pox, and most modern historians believe the disease to have been the true plague. Rhazes attributes a knowledge of the disease to Galen, but in this he was most probably wrong, and even he himself admits that if Galen did know the disease he has left us no information as to its treatment, a most unlikely state of affairs in the case of a voluminous writer such as Galen was. Paulus Ægineta, who is described as the last of the Greeks, and who wrote about 622 A.D., makes no mention of small-pox, though he states he "has left out no disease as far as possible." This is important evidence when we remember that Ahron, writing about the same time at Alexandria, states that the disease was

fairly well known there at his time. Medical historians from the time of Freind have generally attributed the introduction of the disease, as well as our knowledge of it, to the Saracens. The first definite mention of the word "variola" occurs in the description of Marius, Bishop of Vaux, in Switzerland, who says that "in the year 570 a violent malady, with relaxations of the bowels and variola, affected Italy and France." It is questionable whether the variola here mentioned is the small-pox as we know it, for Gregory, of Tours, speaking with personal knowledge of this epidemic, uses words which appear to leave no doubt that plague was referred to. It is probable that small-pox did not become at all general, in Northern Europe at all events, till after the tenth century, and it is not unlikely that the spread of the disease was in a great measure assisted by the crusades. In England and Ireland the early references to the disease are very vague. In the Anglo-Saxon Leech Book of Bald, written about the middle of the tenth century, there is reference to the "Pock," but that this refers to the small-pox is more than doubtful. The author says:—"Against the pocks a man shall freely employ blood-letting and drink melted butter, a bowl full of it: if they break out one must delve away each one of them with a thorn: and then let him drip wine or alder drink within them, then they will not be seen, or no trace will remain." Gilbert, one of the first of the English writers on Medicine, refers to small-pox, but he merely repeats the teaching of the Arabians. John of Gaddesden, who, in the early part of the fourteenth century, wrote the celebrated *Rosa Anglica*, repeats the description of small-pox that was given by the Arabian writers, but he is remarkable in that he states that he treated King Edward's son, the Prince, afterwards Edward II., for small-pox, and cured him by the use of red clothes, so that not a mark was left. This treatment was known in Japan from very early times. Holinshed, in his Chronicle, published in 1577, writing of the year 1366, states that "also manie

died of the small-pox, both men, women, and children." It is probable, however, that this information is taken from an earlier chronicle in which the word "pokkes" is used, in a generic sense, for any skin lesion. Creighton, who has made very full investigations into the early history of small-pox in England, can find no mention of the disease in contemporary letters before the beginning of the sixteenth century. In 1514 it was stated that Henry VIII. had been ill of a disease which the physicians feared would turn to small-pox, but the King was recovered. There is among the Harleian manuscripts a letter dated May 11, 1528, which states that some of the Royal Princesses are sick of the small-pox. It would seem probable that it was not till the end of the sixteenth or the beginning of the seventeenth century that small-pox became established in England.

Our information as to the time when small-pox was introduced into Ireland is also very conflicting. We have no definite information as to epidemics of the disease before the beginning of the eighteenth century, but Wilde states that it is referred to in the Irish MSS. from the beginning of the fifteenth. Dr. Rogers, when describing the epidemic of small-pox as it appeared in the South of Ireland at the beginning of the eighteenth century, says:—"This distemper, though of foreign growth and by transplantation brought amongst us, is now become a weed of our own soil and a native of our own country. It is well known that it came from Arabia, and that it can claim no longer a descent with us than about two centuries." "This," Wilde remarks, "well accords with the date of the first MSS. in which it is mentioned." Describing the epidemic of 1708 at Cork, Rogers says that it was "of the most crude and worst kind, that swept away multitudes."

From this view of the spread of small-pox let us now turn to consider the measures that were adopted to check its ravages and to cure the patients affected with it. In Thibet we have seen that a very strict isolation was en-

forced, and that the people of that country held the life of the individual as of little moment compared with the health of the community. In India and China it is probable that similar ideas prevailed to some extent, for we know how little value, even at the present time, is placed on the life of the individual in those countries. We have seen also how the help of the gods was sought by prayers and offerings to check the disease, and how this help was supplemented by the treatment of the priests and by the practice of inoculation. It is probable also that considerable knowledge of the medical treatment of the disease existed in India in very early times, for Rhazes tells us of a certain syrup of pearls that the Indians use, of which they say that if anyone drinks of it "though nine pustules have already come out, there will not appear a tenth." The Greeks have left us nothing concerning the treatment of small-pox, probably because they were not acquainted with the disease, and our first definite medical pronouncement concerning treatment comes from the Arabian physicians. This treatment was purely personal, directed towards the cure of the individual, or the rendering of the individual less liable to attack, or better able to resist the disease should the attack come, and in no sense was it attempted to deal with the disease as it affects the community as does modern Preventive Medicine.

Rhazes, the first medical writer on small-pox whose works have come down to us, believed that fermentation and ebullition of the blood caused the disease, and as the blood of children tends much more to ebullition than the blood of old people, very few children escape small-pox, and old people rarely get it. As a preventive he recommends bleeding, cold bathing, and a strict regimen to keep the ebullition of the blood in check, and this, he says, "with God's permission, will have a good effect." In curative treatment he has much sound advice to give. He warns physicians to have great care lest they offend against nature, especially in depriving the body of its

natural heat lest one does damage by "depressing the power which the natural heat has of resisting what is hostile to itself." He recommends great care to be taken of the eyes to prevent blindness, and has many prescriptions both for this and for dealing with the pustules in their various stages. The followers of Rhazes for many hundreds of years advanced little on his teaching and methods. Avicenna (A.D. 992-1050) recommended that the pustules should be opened with golden needles, and this practice was still advocated in the sixteenth century. Averrhoes, a Spanish physician of the twelfth century, believed that the properties of substances depended greatly on their colour, and as "all red colours were hot from the fiery particles with which they manifestly abounded" red coloured things should be used about the patient to help in the maturation of the pock. Gilbert, an English physician of the reign of Edward I., further developed this idea by insisting that the patient should even have red coloured drinks, and we have seen that Gaddesden, his successor, boldly claimed that in this way he had cured the King's son. The important thing was that the patient should be kept hot in order to draw the pustules to the surface, and that he should be bled to remove as far as possible the evil from his body. The first great change in the treatment of small-pox patients was introduced by Thomas Sydenham, called the father of English medicine, who was born in the year 1624, and died in 1689. He was more cautious in the use of bleeding, and tried to make his patient comfortable. Thus we find him recommending cooling drinks and plenty of fresh air, while at the same time he banished the multitudes of red blankets. He gives a very accurate description of the disease, and looked on the discrete form as one "in no wise dangerous in itself." He goes on to say that—"From these statements it is easy to answer the common question, as to why so many of the poor survive, and so many of the rich sink under an attack of small-pox; that is, comparatively speaking. This can be referred to one

cause only—viz., the want of opportunity on the part of the poor man for treating himself by a nice and delicate regimen. Their *res angusta domi*, as well as their more countrified manner of life, ensures this." Sydenham has nothing to say of preventive measures; he believed the disease to be the result of a "variulous constitution," and suggests its dependence on telluric and atmospheric conditions, over which we have no control. The practice of Sydenham, though bitterly opposed during his lifetime, gained great support afterwards, and continued to regulate English practice till recent years.

The first great change that was made in the treatment of small-pox in Western Europe after the time of Sydenham was the introduction, early in the eighteenth century, of inoculation. We have seen that there is reason to believe that this was practised both in China and India from early times. In India a particular sect of Brahmins travelled through the provinces and performed with much religious ceremony this operation. Persons about to be inoculated were advised to abstain from the use of both milk and butter for at least a month previously. Men were usually inoculated on the arms, and women lay down on the shoulders. The skin of the part where the inoculation was to be made was first rubbed with a cloth, and often it was one of considerable value: this cloth afterwards became the property of the Brahmin. A few scratches were then made on the skin by some sharp instrument, and over these was bandaged a small pledget of wool that had been soaked in some variolous pus at least a year before. The wool was first moistened in some holy water from the Ganges, and during the operation the Brahmin repeated prayers from the Attharva Veda. In six hours the bandage was removed and the wool permitted to fall off of itself. Next morning cold water was poured on the head and shoulders of the patient, and this treatment was repeated every day till the fever appeared. The bathing was then interrupted till the eruption came out. When this appeared

the bathing was begun again, and persisted in twice a day till the crusts fell off. When the pustules began to change colour they were opened by a sharp thorn. During the entire period of sickness the patient was to remain out of doors, though sometimes he was permitted to lie on a mat at the door of the house during the height of the fever. Cooling food and drinks were given during the illness, and the patient was directed to offer his prayers to the goddess for his recovery, while a present to the operator was expected as a thank offering to the goddess.

A similar practice came into use in other countries, though we have no information as to its origin. The operation was often performed by old women, and several punctures were made in different parts of the body. This was spoken of as "buying the small-pox," as the child to be inoculated was expected to bring the patient from whom the infection was taken a present of some dates or raisins as the price of the variolous matter. In certain parts of England and Scotland also this practice was in use among the poor people. Inoculation, however, as practised in Western Europe differed from that in India in that there was little care taken in the preparation of the patient, and recent infection was generally used. At the beginning of the eighteenth century inoculation was practised with great success in Constantinople, and in the year 1713 Dr. Emanuel Timoni, a Greek resident in that city, who had graduated in Oxford, wrote an account of the practice to Dr. Woodward, of England. This account was published in the "Philosophical Transactions of the Royal Society of London" during the next year. In 1715 the Venetian Consul at Smyrna published in Venice an account of the Turkish practice. The accounts were corroborated by an English surgeon, Mr. Kennedy, who had travelled in Turkey. Mr. Kennedy published a paper on the subject in 1715, and in it speaks of "engrafting the small-pox." These accounts did not attract any attention from the medical profession in England at the time. Dr. Timoni states in his paper that the practice

had been in use in Constantinople for over forty years, and that he himself had personal experience of it for eight years, but he did not know of any patient who had died of the inoculated disease. It is due, however, to the action of Lady Mary Wortley Montague that the practice of inoculation was introduced into England.

In 1716 Lady Mary had accompanied her husband to Constantinople, where he had been appointed ambassador, and from that city many of her celebrated letters were written, giving an account of Turkish customs, and one of these, dated "Adrianople, April 1, O. S., 1718," runs as follows:—"Apropos of distempers, I am going to tell you of a thing that will make you wish yourself here. The small-pox, so fatal, and so general amongst us, is here entirely harmless by the invention of *ingrafting*, which is the term they give it. There is a set of old women who make it their business to perform the operation every autumn, in the month of September, when the great heat is abated. People send to one another to know if any of their family has a mind to have small-pox: they make parties for this purpose, and when they are met (commonly fifteen or sixteen together), the old woman comes with a nut-shell full of the matter of the best sort of small-pox, and asks what vein you please to have opened. She immediately rips open that you offer to her with a large needle (which gives you no more pain than a common scratch), and puts into the vein as much matter as can lye upon the head of her needle, and after that binds up the little wound with a hollow bit of shell; and in this manner opens four or five veins. The Grecians have commonly the superstition of opening one in the middle of the forehead, one in each arm, and one on the breast, to mark the sign of the cross; but this has a very ill effect, all these wounds leaving little scars, and is not done by those who are not superstitious, who choose to have them in the legs, or that part of the arm that is concealed. The children or young patients play together all the rest of the day, and are in perfect health to the eighth.

Then the fever begins to seize them, and they keep their beds two days, very seldom three. They have rarely above twenty or thirty in their faces, which never mark; and in eight days' time they are as well as before their illness. Where they are wounded, there remain running sores during the distemper, which I don't doubt is a great relief to it. Every year thousands undergo this operation; and the French ambassador says pleasantly, that they take the small-pox here by way of diversion, as they take the waters in other countries. There is no example of any one that has died of it; and you may believe I am well satisfied of the safety of this experiment, since I intend to try it on my dear little son.

"I am patriot enough to take pains to bring this useful invention into fashion in England; and I should not fail to write to some of our doctors very particularly about it, if I knew any one of them that I thought had virtue to destroy such a considerable branch of their revenue for the good of mankind. But that distemper is too beneficial to them not to expose to all their resentment the hardy weight that should undertake to put an end to it. Perhaps, if I live to return, I may, however, have courage to war with them. Upon this occasion admire the heroism in the heart of your friend, &c."

Lady Mary was as good as her word. Writing to her husband, "Sunday, March 23, 1719," she says—"The boy was engrafted last Tuesday, and is at this time singing and playing, very impatient for his supper: I pray God my next may give as good an account of him. I cannot engraft the girl; for her nurse has not had the small-pox." This child, at that time three years of age, made a satisfactory recovery. On her return to England in 1722 Lady Mary decided to have her daughter, afterwards Lady Bute, inoculated, and sent for her surgeon, Mr. Maitland, who had attended her son at Constantinople, and desired him to perform the operation. Maitland tried to dissuade her, and suggested a consultation, but this was refused, and eventually Maitland inoculated the

child. During the subsequent illness the child was watched by an old family apothecary and three physicians. It is stated that Lady Mary was so distrustful of these physicians that she never cared to leave the child when they were present. The inoculation was so satisfactory that Dr. Keith, one of the attending physicians, got Maitland to inoculate his own child. The report of these cases spread through the town, but the profession was greatly against the practice, and no more inoculations were done for some time. Caroline, Princess of Wales, who had already nearly lost one of her daughters by the small-pox, was most anxious to have the others inoculated. In order to test the method she obtained leave from George I. to have six condemned felons pardoned for the good of the public provided they would submit to inoculation. The felons were willing, but Maitland refused to inoculate them, fearing the odium that would follow an unsatisfactory result. Sir Hans Sloan, then Court Physician, was appealed to in the difficulty, and when he, after consultation with a Dr. Terry, who had practised in Turkey, advised the trial of the experiment, Maitland consented, and inoculated six felons. Five of them contracted small-pox in a mild degree, the sixth escaped, but afterwards admitted having had small-pox in infancy. All six, however, escaped hanging. Orders were then given for the inoculation of the children on the charity of St. James' Parish, and this was done in the case of eleven of them, with a most successful result. The Princess was now satisfied, and determined to proceed with the inoculation of her own daughters. The King had a consultation with Sir Hans Sloan, and as a result of this granted his permission. The Serjeant-Surgeon inoculated the two children, and the resulting small-pox ran a most satisfactory course. The Royal example was followed to a considerable extent, but the profession and many of the clergy were greatly against it, and we are told that during the first eight years only 845 persons were inoculated, and of these 17

died. In other places the mortality was considerable, and such a clamour was raised against it that some States prohibited inoculation by law. People were told that if they died of natural small-pox it was an act of God, but if they died of inoculated small-pox they would be looked on as having committed suicide, and parents of those children who died after inoculation would be considered guilty of infanticide. The practice was said to be the invention of Satan and the offspring of atheism. In spite of many statistics published to show that the inoculated small-pox was much less fatal to the individual than the natural, inoculation made little headway. Thus Dr. Jurin stated "that of all the children that are born, there will sometime or other die of small-pox one in fourteen," and "that of persons of all ages taken ill of the natural small-pox there will die of that distemper one in five or six," yet only one in sixty of the inoculated had died. In 1747 a small-pox hospital for the poor was started in London, and inoculation was practised there with satisfactory results. At first the inoculated patients were confined to the hospital till all danger of infection was passed, but later on all persons who applied at the gates were inoculated, and so allowed to carry the infection broadcast through the town. In 1752 some 3,538 persons died of small-pox in London alone. In the year 1754 the College of Physicians in London published a strong approbation of the practice of inoculation, and subsequently the medical opposition considerably declined.

For some time it was noticed that inoculation as practised by the medical profession was much more fatal than it was in the hands of monks and old women, and this gave the opportunity to Daniel Sutton, with whose name the practice of inoculation for the next few years was intimately associated. Daniel Sutton was the son of Robert Sutton, a surgeon at Debenham, and there for a time he and his brother assisted their father. Daniel then served as an Assistant Surgeon at Oxford, but returned to his father in 1763. He then proposed some

modifications in the practice of inoculation which his father condemned as dangerous. This led to a disagreement between them, and Daniel settled for himself in Ingatestone, in Essex, where he set up as an inoculator, and claimed to be possessed of a secret that was infallible. By means of advertisements Sutton soon gained great notoriety, and it is said that he hired a clergyman to preach in his favour. This clergyman stated that Sutton and his assistants had inoculated over 2,000 persons without fairly losing one. Many people sought the secret of his success, and it was his habit to communicate it to practitioners on condition of receiving a share of their profits. Finally, in old age, Sutton published his system, and it was found to contain nothing that was not previously known, but he had succeeded in taking from previous workers what was good and rejecting what was hurtful. He operated by a slight scratch, kept his patients cool, and purged them with calomel and antimony. Thomas Dimsdale was also a most successful inoculator in England at this time, and in 1766 he published an account of Sutton's method. In 1768 he was recommended to Catherine, Empress of Russia, and went to that country to teach the practice to the Russian physicians. He inoculated both the Empress and her son, as well as many of the nobility, and returned to England with the title of Baron and loaded with wealth.

In spite of inoculation and improved treatment, deaths from small-pox increased in numbers. It was calculated that at the beginning of the eighteenth century in London about one in fourteen of the inhabitants died of small-pox, but that during the last thirty years of the century the mortality increased to one in ten. At that time the annual loss of life in Great Britain and Ireland from small-pox was calculated at between thirty-four and thirty-six thousand persons.

The next great advance was marked by the publication in 1784 by Dr. Haygarth, of Chester, of "An Inquiry how to prevent the Small-pox." Haygarth's views were

far in advance of his time, and had the real value of them been appreciated there can be little doubt that great benefit would have accrued to the nation. Haygarth took as his starting point the infectious nature of the disease, his words being "that at the present time it is occasioned by neither climate, soil, nor season, but by infection only." He argued that mankind is not necessarily subject to the disease, and that one, though liable to it, will not take it unless exposed to infection. This infection comes from some person with the disease either directly or through clothing, or something soiled by the discharges or scabs from the infected patient. Although the infection may be carried through the air this is not usual, and it is probable that exposure to fresh air soon renders the poisonous matter inert. Haygarth had not at his disposal facts to prove at what time the variolous patient became infectious, but he shrewdly concluded that such persons were not infectious before the appearance of the eruption—that is, before the third day. He accepts the view that the infecting agent is of the nature of a ferment, "which by an admixture of a few of its particles with the blood occasions the generation of a large quantity of poison." In support of all these propositions he brings forward a number of facts derived from his experience of the epidemic in Chester in the years 1777-1778. In order to apply these theoretical conclusions to practice Haygarth drew up the following rules, and suggested that a reward should be offered to the poor for their observance, while the better classes should be asked to observe them "through motives of humanity, in order to preserve their fellow-creatures from so fatal a pestilence as the natural small-pox." The rules were as follow :—

" I. Suffer no person who has not had the small-pox to come into the infectious house. No visitor who has any communication with persons liable to the distemper should touch or sit down on anything infectious.

" II. No patient after the pocks have appeared must be suffered to go into the street, or other frequented place.

" III. The utmost attention to cleanliness is absolutely necessary during and after the distemper. No person, clothes, food, furniture, dog, cat, money, medicines, or any other thing that is known or suspected to be daubed with matter, spittle, or other infectious discharges of the patient should go out of the house till they be washed, and till they have been sufficiently exposed to the fresh air. No foul linen, or anything else that can retain the poison, should be folded up and put into drawers, boxes, or be otherwise shut up from the air, but immediately thrown into water and kept there till washed. No attendants should touch what is to go into another family till their hands are washed. When a patient dies of the small-pox particular care should be taken that nothing infectious should be taken out of the house so as to do mischief.

" IV. The patient must not be allowed to approach any person liable to the distemper till every scab is dropt off, till all the clothes, furniture, food, and all other things touched by the patient during the distemper, till the floor of the sick chamber, and till his hair, face, and hands have been carefully washed. After everything has been made perfectly clean, the doors, windows, drawers, boxes, and all other places that can retain infectious air should be kept open till it be cleared out of the house." It was proposed to appoint inspectors, whose duty it would be to see that these regulations were carried out, and also to keep a register of all the cases of the disease with full particulars as to the persons and families infected. Haygarth did not propose to do away with inoculation altogether, but recommended that it should be done generally and at stated periods, say of two years, so that those who did not wish to be inoculated might keep away from those who were, and so escape infection. After Haygarth had elaborated his plan he found that one very similar in scope and in design had for some time been most successfully adopted in Rhode Island. There small-pox patients were strictly isolated, and if the patient was so ill as not to be able to be moved with safety, the street

was boarded up, the fact was advertised in the newspapers, and guards were set to prevent any one coming near the house. So great was the fear of the disease that these regulations, though at first sight irksome, were readily adopted by the people, so much so that it was said that they appeared "more like a popular custom than the restraints of the law." We nowadays can hardly realise the dread with which the deaths from small-pox had inspired the people at the end of the eighteenth century. Looking back after the lapse of years we can appreciate the advance made by Haygarth, and in how much he anticipated the most recent advances of modern sanitary science; but we can also see that his knowledge was insufficient to ensure for his plan more than partial success. The very success, too, which it would have achieved would have led to its ultimate failure. When freedom from epidemic small-pox during a number of years had dulled the fear that the people had of the disease, carelessness of the precautions would in an unprotected community have been followed by further epidemics. It was at this stage that Jenner came and offered a preventive measure against small-pox, which, in spite of the advances of the past century, still remains at once the most complete and most effective preventive measure of dealing with any infectious disease yet known to medical science.

(To be continued.)

AMERICAN PROCTOLOGIC SOCIETY.

It is announced that the Twelfth Annual Meeting of this Society will take place at St. Louis, Missouri, on June 6 and 7, 1910, under the Presidency of Dr. Dwight H. Murray, of Syracuse, New York State. The Vice-President is Dr. T. Clittenden Hill, of Boston, Mass., and the Secretary-Treasurer is Dr. Lewis H. Adler, Jr., of Philadelphia, Pennsylvania. The subject of the President's Annual Address will be "Undergraduate Proctology." It will be delivered on Monday afternoon, June 6. The provisional programme contains the titles of twenty-nine communications on subjects connected with diseases of the rectum and anus.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Manual of Midwifery for Students and Practitioners.
By HENRY JELLETT, B.A., M.D. *Dubl. Univ.: F.R.C.P.I.; L.M.:* King's Professor of Midwifery in the School of Physic, Trinity College, Dublin; Gynaecologist to Sir Patrick Dun's Hospital; President of the Obstetric Section of the Royal Academy of Medicine in Ireland; Ex-Assistant to the Master, Rotunda Hospital. 557 Illustrations and 17 Plates. University Series. London: Baillière, Tindall & Cox. 1910. Demy 8vo. Pp. xiv + 1210.

It is often the habit to congratulate an author upon his book attaining its second edition, but in the case of this volume it is not only the author who must be congratulated, for all students of midwifery and practitioners must congratulate themselves upon having so excellent, up-to-date, and comprehensive a work in which they may study or to which they can refer. The book, as all of the University Series, is very well bound and of convenient size. The type is good and sharp, and the illustrations are well and clearly reproduced. Many of the illustrations which were only in outline in the first edition have been filled in, and thereby illustrate the points they are required to bring out very much better. A short paragraph is added on "Scopolamin-Morphin Anæsthesia," in which the author gives a review of the statistics and opinions of those who have had large experience in the use of this drug. He does not recommend or condemn the method, but leaves the subject open for further demonstration of the action of the drug while considering that it may possess a considerable field of activity. A new chapter entitled "The Toxæmia of Pregnancy" is devoted to acute yellow atrophy, hyperemesis gravidarum, and eclampsia. The author does not accept the view that these are all due to the same conditions, giving different physical manifestations, but considers that they are indi-

vidually distinct, and considers each disease separately, dealing with the theories, symptoms, and treatment of each in their separate sub-sections of the chapter.

Pregnancy kidney, although belonging to this group of diseases, is discussed in the chapter on "Organic and Functional Disease in Pregnancy" in order that it may be dealt with at the same time as the other forms of nephritis. Eclampsia is very fully considered, and the author adopts a neutral position as regards treatment by operative interference and the termination of pregnancy, and the medicinal treatment. He considers that the best results will be obtained by correct diagnosis of the cause and the adoption of the treatment suitable for that cause rather than by following one or other method as a routine. At the same time he recommends the general practitioner to rely on the morphin treatment unless he has considerable experience in operative obstetrics. In the treatment of eclampsia the author enjoins the necessity of keeping the patient while unconscious in such a position that all fluids will run out of her mouth, and urges that all feeding by the mouth must be stopped. But four pages previously he advises that, if the patient is comatose, purgation may be obtained by giving 2 min. of croton oil in a little butter placed as far back on the tongue as possible, and says that this may reach the stomach. It is far more likely to reach the lungs, where an irritant like croton oil is likely to have an injurious effect. The use of a nasal or ordinary stomach tube is a much less risky and a more reliable method of administering a drug, and is extremely simple. But this is not mentioned. In the chapter on abdominal palpation, when dealing with the diagnosis of pregnancy, the whole of the examination of the abdomen is made by the examiner while facing the patient, and no mention is made of the increased power to be obtained in examining the contents of the pelvis by the examiner turning to face the patient's feet, and then pressing the fingers down each side of the pelvis; but the grip is fully described in the paragraph on the diagnosis of the presentation and position of the fetus. Also, all the illustrations

of abdominal palpation show the examiner wearing gloves, while those of internal pelvimetry are without gloves. In dealing with podalic version an error has been overlooked with regard to the statistics of the Rotunda Hospital. Amongst 35 transverse presentations 13 children were stillborn, a proportion of 1 in 27. This should read 1 in 2.7. Excellent descriptions of the operations of vaginal Cæsarean section and pubiotomy are added to the chapter on Cæsarean section, and the relative scope and position of all the operations are considered.

The volume is thoroughly up to date, and forms both pleasant and interesting reading, besides being clear and concise in its teaching and advice. It is a book to be strongly recommended to the medical profession as a source of knowledge and sound advice in the management of pregnancy and parturition.

The Essentials of Chemical Physiology. For the use of students.

By W. D. HALLIBURTON, M.D., LL.D., F.R.S., F.R.C.P.,
Professor of Physiology in King's College, London; Author
of "Text-book of Chemical Physiology and Pathology."
Seventh Edition. London, New York, Bombay, and
Calcutta: Longmans, Green & Co. 1909. 8vo. Pp.
xi + 280.

It is late in the day, nor is it necessary, to attempt criticism of Halliburton's "Essentials of Chemical Physiology," of which well-known work we welcome the seventh edition.

The book has been thoroughly revised, and addition and excision have been so nicely balanced that the bulk of the volume remains about the same as in the sixth edition. There are twenty-six lessons in all; of these twelve are elementary, while the remainder form an advanced course. It is not to be understood that an entire lesson is necessarily to be taken at a single sitting of the class. The author points out in his preface that the longer lessons can easily be subdivided by the teacher according to the time at his disposal. This warning is especially applicable to Lesson II., which is new and which deals with some typical organic compounds. In

that lesson reactions with alcohol, aldehyde, formic acid, acetic acid, and oxalic acid are given, and these are followed by brief descriptions of hydrocarbons, alcohols, aldehydes and ketones, the fatty acids, ethers, amino-acids, and aromatic compounds. Here we have abundant material for half a dozen lessons at least.

Exception must be taken to the word "hæmacytometer," which is used repeatedly in the Appendix. It should be written "hæmatocytometer," or less correctly "hæmocytometer."

There are seventy-one illustrations. The figures of urinary deposits do not do justice to Professor Halliburton or to his work. There is only one plate in the book, showing three sets of osazone crystals formed in the phenyl-hydrazine test for sugars—namely, phenyl-glucosazone, phenyl-maltosazone, and phenyl-lactosazone.

Medizinisches Vademekum in deutscher und englischer Sprache. Von B. LEWIS. Erste Auflage. Wien: B. Lewis. London: J. & A. Churchill. 1910. 8vo. Pp. 559.

Medical Vademecum. In German and English. By B. LEWIS. With Preface by PROFESSOR A. POLITZER. London: J. & A. Churchill. Philadelphia: P. Blakiston, Son & Co. Leipzig: K. F. Koehler. Vienna: B. Lewis, Alserstrasse xix.

THE purpose of this book is to make as easily accessible as possible to German and English physicians the medical vocabulary of both languages. This purpose is fulfilled by presenting a series of German clinical lectures, conversations with patients, &c., side by side with an exact English translation. The idea is new, and is most helpful. The ordinary German-English dictionary is often worse than useless to the medical student who desires to understand medical German; but in the present book he will find the exact equivalent in English of every technical German medical word he is likely to require. The book, however, is more than a mere dictionary. The clinical lectures are well chosen, and are in themselves instruc-

tive; but, what will be most appreciated, they are in the exact phraseology in which lectures at a German clinique are generally delivered, and will in consequence prepare the ear of the student as well as his eye. The author has had much experience in teaching German to English and American visitors to the Vienna Medical School, and her experience has enabled her now to confer a benefit on all future visitors by providing them with this work. We congratulate the author on her happy idea, and cordially recommend the book to all of our readers who desire to commence a study of German, or to renew their knowledge of that language.

Our Baby: for Mothers and Nurses. By MRS. J. LANGTON HEWER, Certified Midwife: late Hospital Ward Sister. Twelfth Edition (Illustrated). 70th Thousand. Bristol: John Wright & Sons, Ltd. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1910. Pp. 174.

"A young mother is usually influenced a great deal by her monthly nurse, and, where the nurse is intelligent and properly trained, this is a good thing. Unfortunately, many so-called nurses have no right to the name at all; they have inherited, or invented, certain ideas on the bringing up of a baby, to which they cling with all the tenacity of obstinate ignorance."

The foregoing sensible passage culled from the "Introduction" to Mrs. Hewer's sensible book reminds us that the Midwives Act, 1902 (2 Edw. VII., ch. 17), came fully into force on April 1, 1910; and henceforth no woman may "habitually and for gain" attend women in childbirth unless she is certified under the Act. The object of the Act, of course, is to ensure that the practice of "midwifery" (using the term in its strict etymological sense) shall be carried on only by properly qualified women. Unfortunately, this beneficent law does not apply to Ireland, and in this country Mrs. Hewer's words may still carry a warning to young mothers not to place implicit trust in a nurse who has not had the

full training necessary for enrolment by the Central Midwives Board. It may interest our readers, by the way, to learn that at the end of 1909 there were 28,845 certificated midwives on the roll of that Board.

In the number of this Journal for November, 1908 (Vol. 126, No. 443, third series, page 369), we expressed a very favourable opinion of the eleventh edition of this useful and well-written book. That opinion we re-affirm in regard to the twelfth edition, which has been improved by the addition of some very good illustrations—one, which is especially good, shows the process of “peeling” in scarlatina.

It is refreshing, in these days of “*antis*,” to read Mrs. Hewer’s remarks on “Vaccination” (pages 95 to 97) and “Smallpox” (pages 133 and 134). Altogether, we regard this little book as eminently orthodox and reliable as a guide “for Mothers and Nurses.”

A System of Clinical Medicine dealing with the Diagnosis, Prognosis, and Treatment of Disease for Students and Practitioners. By THOMAS DIXON SAVILL, M.D. London. Second Edition, revised by the Author. London: Edward Arnold. 1909. 8vo. Pp. xxvii + 933.

Of late years, owing to the rapid advance of medical research, Systems of Medicine have assumed such large dimensions as to be of little value as books of reference to a busy practitioner, and it was, the author states, with the object of supplying a Text-book of Medicine which would at the same time be complete and suitable as a book of reference that he undertook the present volume. The subject in the case of each disease is approached from the standpoint of symptomatology, and the order of sequence adopted is that usually employed in the examination of a patient.

The first chapter gives a scheme for the examination of cases, with certain general principles underlying methods of observation.

The second chapter discusses the physiognomy of

disease; while the succeeding chapters deal with the symptoms and signs referable to the various organs of the body, and the diseases which cause these symptoms.

Each chapter is divided into three parts. Part A. treats of the symptoms which indicate disease of an organ or system, the fallacies incidental on their detection, with a brief differential account of causes which may give rise to them. Part B. treats of the physical signs referable to the organ under discussion, and Part C., which constitutes the major portion of each chapter, is prefaced by a clinical classification of the various maladies which may affect the organ, with a summary of routine procedure to be adopted, followed by a series of sections dealing with the several diseases arranged according to their clinical relationships, and various forms of treatment, both dietetic and medicinal.

The plan of the work has been carried out with considerable success, giving as it does points as to symptoms, physical signs, modes of treatment, and mentioning modern theories and methods, thus enabling the reader to gain easily and quickly the required information without the necessity of unnecessary and irrelevant reading.

The work is well printed, and the plates are numerous and well chosen. The recent tragic death of the talented author is much to be deplored.

Emergencies of General Practice. By PERCY SARGENT, M.B., B.C. (Cantab.), F.R.C.S., Surgeon to Out-patients, St. Thomas' Hospital; and ALFRED E. RUSSELL, M.D., B.S. (Lond.), F.R.C.P., Physician to Out-patients, St. Thomas' Hospital. London: Henry Frowde and Hodder & Stoughton. Oxford Medical Publications. 1910. Svo. Pp. xi + 364.

It is in certain acute and urgent conditions which require prompt recognition and treatment that the practitioner wants, for reference, a book which will, in a concise form, give him the information he requires without having to wade through a systematic work on Medicine or Surgery.

Such a book is now to be obtained in "*Emergencies of*

General Practice," which includes valuable chapters on the eye and ear and anæsthetics in procedures of emergency. Diagnosis is discussed in as practical a manner as possible, and in the case of infectious fevers in considerable detail—a point of importance in that the diagnosis not infrequently constitutes the emergency. Immediate treatment is fully discussed, and the after-treatment given in outline. The illustrations, numbering over ninety, are very good, but we would suggest that in a second edition those on pages 118 and 280 might be omitted, and additions made by the illustration of the stages in suturing in gastro-enterostomy, or lateral anastomosis, and a coloured plate illustrating "Koplik's spots."

General practitioners will value this book, which is very readable, concise, and eminently practical.

Hæmorrhage and Transfusion. By GEORGE W. CRILE, M.D. New York and London: D. Appleton & Co. 1909. Royal 8vo. Pp. 560.

THE first fifty pages give the records of numerous experiments on animals showing the results of the various methods of treating hæmorrhage in common use, infusion of saline solution, administration of various drugs, as adrenalin, strychnin, digitalin, &c. The following is a brief summary of these experiments:—With a rapid and even hæmorrhage, blood pressure falls unevenly, the greatest fall is just after or towards the end of the loss of the first third of the blood removed. With a slow hæmorrhage, the fall of pressure is more uniform. In death from hæmorrhage the respiratory centre fails first, there is diminished vasomotor reflex. After hæmorrhage of about three-fifths of the total amount of an animal's blood, spontaneous compensation may bring the blood pressure back to the level at which life may be maintained. Good compensation is associated with active vasomotor centres. After a long delay rapid infusion of saline had little, if any, favourable effect on the blood pressure, but was followed by respiratory failure and cardiac dilatation. After infusing an amount of saline

equal to the amount of blood withdrawn, a further infusion was associated with lowering of blood pressure, even if the heart was not overtaxed. Excess of saline infusion markedly embarrassed the respiration. With complete failure of compensation saline solution affected the blood pressure little or not at all, and did not promote recovery. With compensation well marked, saline was effective in further raising the blood pressure. If saline was given at once, first rapidly and then slowly, it possibly raised the blood pressure well up to the normal level. If there was a long delay after the hæmorrhage, saline infusion caused little rise in the blood pressure after a certain limit had been reached, and the rapid further infusion of enough to equal the amount of blood lost embarrassed the respiration and circulation, while a slower rate was well borne, and if very slow brought the animal back to a normal condition, although with a low blood pressure. When given shortly after hæmorrhage saline infusion brought back the activity of the vasomotor centre well; when given moderately shortly after hæmorrhage—in from 20 to 30 minutes—rapid saline infusion was quickly followed by respiratory and cardiac failure. After hæmorrhage strychnin did not increase the activity of the vasomotor centre; when there was failure of compensation, strychnin in therapeutic doses did not assist normal saline infusion in restoring normal functions. After hæmorrhage and the administration of normal saline infusion, strychnin in therapeutic doses, given either before or after the infusion, did not affect the blood pressure. After hæmorrhage and partial recovery by means of normal saline infusion, strychnin in tetanic doses caused marked increase in blood pressure, which was at once followed by cardiac failure. After hæmorrhage digitalin had a deleterious effect and hastened death. After hæmorrhage adrenalin raised the mean blood pressure relatively less than it does under ordinary circumstances, and brought on rapid cardiac failure. The longer the interval of low blood pressure the less marked were the effects of all treatment.

Then follow the accounts of experiments to compare

the effects of acute hæmorrhage and shock on the blood mass, and various clinical observations with the same purpose in view. The question of the differential diagnosis between internal concealed hæmorrhage and shock, especially when both conditions exist at the same time, as not infrequently happens, is an important one. In the absence of a history of traumatism, the presence of visible bleeding, or the presence of free fluid in the large body cavities, the author believes that the diagnosis cannot with certainty be made without a series of carefully made blood examinations. This is not surprising when we consider that when the bleeding occurs into the abdominal cavity, the most frequent site of internal concealed hæmorrhage, the two conditions vary only in the fact that in one case the blood is outside the vessels and in the other inside. Widely different changes do occur in the blood in the two conditions: but in man it is ordinarily very difficult to obtain opportunities to make careful examination in such cases, and all that can usually be done is to provide for the immediate necessities of the patient. These changes vary in extent according to the amount of blood lost and the rapidity of the flow, but in the average case one would always expect to find—(1) a fall in the number of red cells per cubic millimetre, (2) a decrease in the percentage of hæmoglobin, (3) an increase in the number of the white cells per cubic millimetre, and (4) a diminution in the coagulation time. In shock, on the other hand, there is no fall in the hæmoglobin, no rise in the white count, no fall in the red count, and no diminution in the coagulation time.

Then follow the accounts of numerous experiments on transfusion, with the following conclusions:—Transfusion is the ideal treatment for acute hæmorrhage of any degree of severity in normal dogs. Even after complete cessation of respiration and efficient cardiac action, as long as there is any auricular or feeble ventricular beat, other methods of treatment having failed completely, a dog can usually be resuscitated by direct transfusion. Transfusion is a better form of treatment for shock alone, or combined hæmorrhage and shock, than

any other known form of treatment. The blood pressure is raised, it is better sustained than by other fluids, and the rapidly occurring improvement is greater than that obtained by the use of fluids other than blood. The use of infusions of saline solution or other artificial serums is not as efficacious as transfusion of blood in treating shock, combined hæmorrhage and shock, or hæmorrhage alone, because the former cannot be injected in as great an amount as the amount of the blood which may be transfused, without passing out of the vascular system of the recipient. Consequently, the blood pressure is not so well sustained, and while the improvement is rapid it is less marked. Transfusion to a certain extent (saline infusion less so) acts independently of the vasomotor centre in raising the blood pressure, its action is partly mechanical. When the vasomotor centre retains any vitality, transfusion increases it. At the same time, the heart is able to act more efficiently by reason of the mechanically-raised blood pressure.

In Chapter IX. are experiments on the effect of transfusion on nitrogenous metabolism of dogs, with the conclusion that transfusion of normal blood after hæmorrhage does not prevent the effect on nitrogenous metabolism of hæmorrhage alone. In Chapter XI. are some very important experiments on the effect of treating by transfusion dogs poisoned by CO gas. This treatment seemed to be of greater therapeutic value than any other means. For an animal to recover it was necessary to begin transfusion immediately after the heart finally stopped beating. Chapter XII. is concerned with experiments on transfusion in the treatment of lymphosarcoma in dogs. The blood used was obtained from dogs with either a natural or an acquired immunity. Of the ten animals treated, seven were completely cured; in two of the remaining three there was a marked effect, and only one dog died without showing any regression as a result of the exchange of the blood, and in this case there was more than a reasonable doubt regarding the immune condition of the donor. The donor should be a strong, healthy animal, immune to the tumour, and a large replacement of the recipient's blood

should be made, giving him from 25 to 50 per cent. more blood than is removed.

The second half of the book is given up to clinical studies. Chapter XIV. gives a very full account of how to perform direct transfusion in man by both the suture method of Carrel and the canula method of the author: the latter is distinctly the more simple. We may summarise the results of the clinical studies. In the advanced stages of pernicious anæmia and leukæmia transfusion does not favourably modify the disease, and it has not been shown that treatment in the early stages is more successful. In the case of sarcoma interesting facts are being learned from treatment by transfusion: whether they will prove to be of clinical value is undetermined. At the present time the most that can be said is that but slight encouragement is offered. Transfusion has no effect in checking the growth of carcinoma. In exophthalmic goitre the negative results following transfusion, with or without preliminary bleeding, seem to indicate that the toxic substances present in this condition are in rather stable combination with the fixed tissues; therefore, this treatment has not afforded relief. In cases of tubercular peritonitis the operative risk is greatly lessened by transfusion. Moreover, it seems quite certain that transfusion has more than a temporary effect on the tuberculous process itself. In cases of chronic suppuration transfusion may cause a marked increase in the vitality of the patient, otherwise it seems to have no effect. As anæmia plays an important rôle in the cause of death from shock, and if there is sufficient blood in the vascular system as a whole, the circulation through the central nervous system is efficient; therefore, transfusion is a valuable treatment for uncomplicated shock. Transfusion furnishes the ideal treatment for acute uncomplicated hæmorrhage when the source of the hæmorrhage can be reached and controlled. In chronic hæmorrhage from the bowels of long duration, transfusion will not only replace the lost blood, but may prevent further hæmorrhages and effect a cure after all other measures have failed. In this connection, the question of treating

severe hæmorrhages in typhoid fever by this means is worthy of careful consideration, though the results obtained so far have not been very encouraging. While the author has had no personal experience in transfusion for illuminating gas poisoning in human beings, he feels that the experiments on dogs and the cases reported by other observers show that it may be a life-saving measure. It should be preceded by free bleeding. In severe cases it would seem to be justifiable to resort to bleeding and transfusion before trying other measures. In cases which he has collected from various sources there were eight recoveries and two deaths, though many of the cases were of a very advanced degree of poisoning.

From clinical and experimental research into the technic of transfusion it is concluded that the vascular systems of two individuals may be united so that intima comes in contact with intima only; that this may be best accomplished by a special anastomosis tube, or by the Carrel suture; that blood may be transfused without clotting; that the use of the radial artery of the donor and any superficial vein of the recipient yields the best results; that the operation may be done painlessly; that the blood lost by the donor is regained in from four to five days; that the amount transfused is under the immediate control of the operator, and that the rate of transference should be gauged carefully and kept within the limits of physiological safety.

The Medical Annual: A Year Book of Treatment and Practitioner's Index. 1910. Bristol: John Wright & Sons. London: Simpkin, Marshall, Hamilton, Kent & Co. 8vo. Pp. ciii + 991.

THIS is the twenty-eighth number of the "Medical Annual." The production is so well known to the profession at large that any commendation of ours is superfluous. It is this year the joint compilation of thirty-two writers, each one of whom is a well known authority in his own branch. In the preface the Editor states that he is always glad to hear from subscribers

respecting any subject on which they would like information, and we have no doubt that in the future many subscribers will recognise the advantages entailed in this offer. The body of the work is divided into two parts. The first deals with the advances in *Materia Medica* and other therapeutical agencies made during the year under review. A good deal of this advance consists in the abandonment of previously used remedies, but this is by no means to be despised. The 70 pages devoted to drugs will be useful for reference. A careful sketch of vaccine treatment and an interesting article on the therapeutic use of sea-water injections are also included in this part of the book. The article on sea-water is elaborately illustrated with pictures of the "before and after" type, which will compel the attention of readers to this novelty. A section also is devoted to Radiology and Electro-therapeutics. Part II. is a Dictionary of Treatment, in which the advances, both therapeutical and pathological, of the year are arranged in alphabetical order. This part, of course, comprises the main bulk of the book. The work appears to us to have been carried out with great care and thoroughness, and we feel sure that it will find as much appreciation this year as the similar work has in the past. At the end of the volume some useful lists are, as usual, included. Consumptive Sanatoriums, Invalid Homes, British Spas, &c., can all be looked up in them with a minimum of trouble.

The Last Days of Charles II. By RAYMOND CRAWFURD, M.A., M.D. Oxon., F.R.C.P. Oxford. At the Clarendon Press. 1909. Medium 8vo. Pp. 80.

THE author of this interesting contribution to the Medicine of History avows that his "primary object in putting pen to paper has been to establish the true cause of the death of Charles II." Be that as it may, the primary outcome of the book is to show that the "Merrie Monarch" died in the faith of the Roman Catholic Church. With this as medical journalists we have nothing to do, and we will confine ourselves to two points—first, the diagnosis of the King's fatal

illness arrived at by Dr. Crawford from a study of the various accounts of that illness in contemporary literature; and, second, the MS. account of the illness and death of the King written in very good Latin by Sir Charles Scarborough, M.D., F.R.C.P., one of the original Fellows of the Royal Society, physician in succession to Charles II., James II., Prince George of Denmark, and William III. and his Queen Mary.

As to the cause of the King's death, Dr. Crawford says:—"One may assert, with considerable confidence, that his death was due to chronic granular kidney (a form of Bright's disease) with uræmic convulsions, a disease that claims the highest proportion of its victims during the fifth and sixth decades of life. From boyhood Charles had lived hard: the physical strain and the mental stress that leave their mark on the blood-vessels and through them on the kidney, he had known in full measure. Numerous allusions up and down the literature of the time indicate that he was a habitually large eater, and mainly of albuminous food. Alcohol he had taken freely, at times to gross excess; he had been the slave of sexual passion. Gout had come on him in his later years."

While agreeing in Dr. Crawford's diagnosis, we must take exception to his statement that chronic granular kidney is "a form of Bright's Disease." This is questionable. As Professor Rose Bradford says in his article on Nephritis in Allbutt and Rolleston's *System of Medicine* (Vol. IV., Part I., 1908, page 587):—"There is much evidence to prove that the renal change [in chronic granular kidney] may be the direct result of the arterial disease, and, therefore, merely a local manifestation of a widespread degenerative process. This form of granular kidney has no direct relation to acute or chronic nephritis, and is more accurately classified as a degeneration, and hence *it is doubtful whether it should be spoken of as Bright's disease*, although clinically such cases may present dropsy and albuminuria." Dr. Bradford very correctly adds: "Dropsy and albuminuria may, however, both be present without there necessarily being nephritis or Bright's disease, as, for example, in cardiac disease with passive congestion of the kidney."

To our mind, the most interesting part of Dr. Crawford's

book is Scarburgh's MS. account of the King's illness and death, and the author's memoir of the King's physician, Sir Charles Scarburgh, M.A. Cantab., M.D. Oxon., F.R.C.P.

Both give us a clear insight into the state of medical practice in England in the seventeenth century. Numerous consultations were held in the King's case, and on at least two occasions no less than fourteen physicians took part in those consultations. We hope their fees were paid by James II., but we fear this was very doubtful, notwithstanding that Scarburgh speaks of that sovereign as "Inclytus ille Heros, Regis Frater Unicus, Regnique Optimo Jure Hæres, Jacobus tunc Eboraci quidem et Albaniae Dux Illustrissimus, hodie vero Britanniæ Augustissimus Monarcha."

The medical profession is indebted to Dr. Crawford for so attractive a contribution to the History of Medicine in the British Isles, which Dr. J. F. Payne in the FitzPatrick Lectures for 1903 and Dr. Norman Moore in the FitzPatrick Lectures for 1905-1906 had already enriched with their facile and classical pens.

The book is beautifully brought out by the famous Clarendon Press.

Pulmonary Tuberculosis and Sanatorium Treatment. A Record of Ten Years' Observation and Work in Open-air Sanatoria. By C. MUTHU, M.D., Physician, Mendip Hills Sanatorium. London: Baillière, Tindall & Cox. 1910. 8vo. Pp. vi + 201. Ten Plates.

THIS book is divided into three parts, the first of which deals with what the author calls the scientific aspect of the problem of tuberculosis, the second with the sanatorium treatment of affected persons, and the third with the social aspect of the problem arising from the prevalence of the disease in the community. The second part we may dismiss at once; it is mainly an account of the method of treatment carried out at the author's private sanatorium, and does not differ materially from the numerous accounts of such treatment at other places that have been published recently.

During the last few years our views as to the causation and

prevention of tuberculosis have undergone considerable change, and though our knowledge of both these subjects is probably far from complete, yet it would seem certain that we are coming to a much more accurate appreciation of the relative bearing of the various factors in the problem. Formerly the view that the disease was inherited paralysed all efforts for its prevention. With the discovery of the tubercle bacillus and the proof of its infectiveness our efforts were directed mainly against that organism, and that too with but little success. Though we still believe that tuberculosis is always the result of infection with the tubercle bacillus, and that this organism is always derived either directly or indirectly from some other individual, whether man or lower animal, infected with the disease, yet we have come to recognise the importance of the susceptibility of the individual to infection, and have gained some knowledge of some of the factors on which this susceptibility depends. Our views, too, as to the channels of infection have changed considerably, and the knowledge of the importance of alimentary infection has given us a new and valuable preventive weapon. The evidence that has accumulated that tubercular patients if treated in the early stages can, in the majority of instances, be cured easily and effectively has given the stimulus of hope to our preventive measures.

Just as we were beginning to pride ourselves on the more rational view that was generally taken of the problem it is not a little disconcerting to meet with Dr. Muthu's book, and in it to read the following statement of the part played by the tubercle bacillus :—" They are no more the cause of tuberculosis than poverty or any other predisposing causes. If they were all to be destroyed by some means to-morrow, consumption would not be eradicated, as the predisposing factors that have made tuberculosis possible would still remain, and would help the growth of ' spontaneous tuberculosis.' " Such teaching in the light of our present knowledge seems to us absolutely wicked, and we can only regret that it is promulgated by a member of our profession. We should be more concerned at the spread of this teaching did we think the book before us would find many readers, but this we think is unlikely. Loose

thinking, combined with careless writing, has made the author's meaning in many places obscure, and bad grammar makes the task of elucidating it anything but pleasant. Let us take a few examples. "If the very existence of life depends upon constant exercise, and this exercise in altered conditions of health is maintained by the opposition of micro-organisms when they have become pathogenic, would they not keep alive life and its functions by compelling the organism to keep a constant vigilance through their presence and their toxins." Again we read: "By spontaneous tuberculosis is meant, as has already been pointed out, that it is possible that common forms of bacilli that are found in the body under suitable environment change their properties and become identical with those of tubercle bacilli, giving rise to symptoms of tuberculosis." The following truism is badly expressed:—"Clinically speaking, the prognosis very much depends upon the efficient working of the heart and the stomach. Without their aid the physician and patient are helpless." What must one think of a book that contains the following remark?—"It will be nearer the truth to say that a temperature with physical signs is more hopeful than no temperature with the same physical signs." After such a remark we are not surprised to read that organisms "have become abnormally active and virulent, and have pounced upon our flesh and blood to our destruction." These are merely examples taken at haphazard, and equally illuminating quotations might be made from almost every page. The book will be invaluable to one looking for examples of bad and careless writing, but we cannot recommend it to any one who wishes to study the treatment of tuberculosis.

Elementary Physiology. By W. B. DRUMMOND, M.B., C.M., F.R.C.P. Edin.; Assistant Physician Royal Hospital for Sick Children, Edinburgh, &c. London: Ed. Arnold. Pp. viii + 198.

DR. DRUMMOND has compiled an excellent little book designed to supply the physiology required in a course of hygiene suitable for teachers in training. The author justly claims

that he has paid particular attention to the peculiarities of childhood and to physical training. A fuller account also is given of the physiology and anatomy of bodily exercise than in other manuals of similar size, and special attention is devoted to the nervous system of the child.

After an introduction dealing shortly with animal life as seen in some of its simplest conditions, the subjects of nutrition and growth, food, foodstuffs, and digestion are treated in succession. Then come three very useful chapters on the bones, joints, muscles, and movements of the body. These are followed by chapters on the circulation, blood, respiration, excretion, and fatigue, in all of which practical points are frequently emphasised. The special senses and the nervous system are then dealt with, the book concluding with a chapter on the nervous system of the child. The illustrations, which are numerous, are very helpful, and on the whole well executed. The text is written throughout in clear and simple language.

The Optic Nerve and the Accessory Sinuses of the Nose. By PROFESSOR A. ÓNODI (University, Budapest). Authorised Translation. By J. LÜCKHOFF, M.D. Edin., Ch.B., Cape Town. London: Baillière, Tindall & Cox. 1910. Cr. Quarto. Pp. 101.

ONE of the most difficult tasks which face the reviewer is to do justice to such a work as is now under our consideration, for it is almost impossible to convey to the reader of this review any adequate idea of the painstaking work involved in the production of this monograph, both as regards the life-size plates and the complete *résumé* of the literature connected with the subject. With regard to the latter, the main literature is in the form of isolated cases recorded here and there, and it must have been difficult to collect and appraise them at their true value.

The beautiful plates speak for themselves, and give a real practical insight into the anatomical relations of this difficult region. To mention one point as an illustration—one plate shows how the frontal sinus can come into relation with the optic nerve. Whatever may be said of the relation of a

knowledge of anatomy to general surgery, this book makes it quite clear that the only hope in rhinology is a very practical acquaintance with the regional anatomy and its many variations. It is a real pleasure to recommend this work to all ophthalmogists and rhinologists, and it can be confidently asserted that its perusal will be a pleasure.

Parsimony in Nutrition. By SIR JAMES CRICHTON-BROWNE, M.D., LL.D., F.R.S.; Lord Chancellor's Visitor in Lunacy, London. London: Funk & Wagnalls Co. Pp. vi + 111.

THE above is an expansion of a presidential address delivered by the author before the Section of Preventive Medicine of the Royal Institute of Health, which met at Buxton in 1908. In it Sir James Crichton-Browne criticises adversely the utility of reduction of the human dietary, and particularly of its protein content, to the degree recommended by Mr. Horace Fletcher and Professor Chittenden. The latter, it may be recalled, places the amount of protein required by a man of eleven stone weight (70 kilos) at 60 grammes—that is, about half the quantity laid down by Voit, Atwater, and others. A short account is given of the experiments of Chittenden on the one hand, while on the other evidence against his conclusions is adduced from various sources ranging from the experience of prison dietaries in England, Scotland, France, and Prussia, to the feeding of the Japanese army in the late war with Russia.

The book is full of common sense and of facts useful to everybody interested in the questions of economy and adequacy of nutrition.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR CHARLES BALL, F.R.C.S.I.
General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF PATHOLOGY.

President—ARTHUR H. BENSON, M.B., F.R.C.S.I.
Sectional Secretary—W. BOXWELL, M.B., F.R.C.P.I.

Friday, February 4, 1910.

Pyonephrotic Kidney.

MR. L. G. GUNN, in exhibiting a specimen of pyonephrotic kidney, said the patient had only one of the symptoms commonly associated with the condition—viz., some tenderness in the region of the kidney. He had been sent for on December 12, 1909, to see a lady who apparently had some intestinal obstruction. She had had typhoid fever about eight weeks before. During convalescence she had had two or three attacks of vomiting, and the day before he saw her vomiting had recurred with a rise of temperature, and the vomit was stercoraceous. At the time he thought the case one of either septic infection of the gall-bladder, with adhesions in the hepatic flexure of the colon, or a malignant growth in the large bowel. He treated her with olive oil injections. The tumour subsided, vomiting stopped, and she got very much better. In a few days, however, another attack came on, and he advised an operation. On cutting down on the large bowel they found it pushed out of place by the kidney lying behind it. He freed the bowel to some extent, satisfied himself that there was no definite lesion in it, and then closed the wound, and turned the patient over and removed the kidney. The

pelvis was full of pus, and a stone was seen in the kidney. The ureter was normal also. The fact that the urine was normal increased the difficulty of diagnosis. He found it hard to realise that a stone or kink could make the obstruction. The kidney was quite fixed, and he thought the condition in some of such cases was possibly due to a spasm in the upper part of the ureter. They might, therefore, have to look for a nervous origin in a good many of the cases, and there might be a similar condition present in muscular coats of the bowel causing temporary obstruction.

Laryngo-typhus.

DR. DAY exhibited a specimen of ulceration of the larynx following enteric fever. The patient was a young man, about thirty, who was taken into hospital in advanced enteric fever, and with a bad alcoholic history. He lived only a few days, but shortly before he died he coughed up a good deal of very fœtid mucus, which evidently came from his larynx. He exhibited the specimen because of its rarity.

Septicæmia following Enteric Fever.

In another case of advanced enteric fever with bad alcoholic history, the patient improved for about ten days, and then got a rigor, for which no cause could be found. They found the liver dulness increased, and on examination they got some bloody fluid with the needle. Afterwards they got some pus, and it was thought he was suffering from empyema. Part of a rib was removed, but only about a teacupful of bloody serum was found, and no pus. He sank and died, and they found an infarction in the lower lobe of the right lung.

PROFESSOR WHITE said the infarction was very small. From it he got some typhoid bacilli. He also got several kinds of cocci, including a streptococcus, which in its first cultivation was extremely long. His reading of the case was septicæmia following enteric fever. In the specimen of ulceration of the larynx, the ulcer was lower than the usual position. There were no bacilli: the organism in the pus was one of the ordinary staphylococci.

DR. PARSONS recalled a case in which a tracheotomy had to be done on account of the patient's difficulty in breathing. Immediately afterwards surgical emphysema developed, and

the swelling spread all over his body right down to the groin. The *post-mortem* revealed a very similar condition to that shown in Dr. Day's first specimen. He asked if the infarct was embolic, and whether he had cardiac signs.

DR. GOULDING referred to a discussion on the subject of emphysema, at which Dr. Croly, who had performed the operation referred to by Dr. Parsons, said the emphysema was not the result of the operation, but of the condition of the lung.

DR. DAY, in reply, said he had seen three such cases, and in none of them had he seen emphysema. The patient probably died from intense poisoning. The second case had no heart symptoms other than the usual softening associated with bad enteric fever.

Pulmonary and Tracheal Diphtheria.

DR. DAY also exhibited a specimen showing tracheal and pulmonary diphtheria from a girl aged seven years, who had been reported three days ill from "croup." It was evident she was suffering from pulmonary diphtheria, and her condition was so bad that they had to operate. She improved considerably for about thirty hours. Then she got symptoms of further obstruction lower down in the lungs, and died. She coughed up casts of the bronchial tubes. It was peculiar that in spite of 20,000 units of antitoxin the membrane regrew, and had grown over the trachea and down into the bronchial tubes. After the operation the case went through the moist form of the disease, but next day the dry form came, which nearly always terminated fatally. She had one lung almost completely blocked.

PROFESSOR WHITE said the larynx was completely blocked with the diphtheritic membrane. The lumen of the trachea was almost completely filled with the exudations. The cut surface of the lung showed most of the bronchi quite filled, though some were partly free. Microscopic sections of the accompanying broncho-pneumonia showed a great tendency to necrosis.

MR. GUNN inquired as to the method of dosage of the antitoxin.

DR. W. G. HARVEY asked if it was possible that the membrane was partially due to some other virulent organism, when it continued to grow after the antitoxin.

DR. DAY, in reply, said they did not go in for large doses, and they apportioned the dose to the severity of the disease rather

than to the size of the patient. They gave 4,000 units, and repeated that dose sometimes twice, sometimes three times. He could not say if any other organism was present; they nearly always diagnosticated diphtheria from the clinical aspects. Swabs in bad cases very often gave negative results. The case was one of the first to show him that they could have diphtheria starting in the lungs and working upwards.

PROFESSOR WHITE said that in a recent case which seemed as if an abscess in the tonsil had burst, the culture gave ordinary streptococci. The low temperature, however, still suggested diphtheria. Next day a swab gave an absolutely pure culture of diphtheria bacilli. As regards Dr. Harvey's question of the association of some other virulent organism, he had not investigated that point, as the lung sections were full of diphtheria bacilli.

Sarcoma of the Femur.

DR. W. G. HARVEY exhibited a specimen of sarcoma of the femur taken by amputation from a girl aged fifteen. Three months before admission to hospital she had had a cycle accident. Six weeks later she noticed a swelling on the leg, which gradually increased in size, and at the time of admission was slightly painful, with some increase of local heat. The specimen showed a large swelling at the lower end of the femur which seemed to invade the centre of the bone, but the greater part was sub-periosteal. At first sight microscopically he thought it looked like a carcinoma, but from the point of view of the radiograms, which he showed, it was a typical periosteal sarcoma, and histologically alveolar.

MR. GUNN said he had looked upon the growth at first as endosteal in origin, but from the photograph he thought it must be periosteal.

DR. STOKES said there was not much use operating in periosteal sarcoma, as the patients always died.

PROFESSOR WHITE said that although the shaft appeared intact he thought the growth originated inside the bone. The section under the microscope was in favour of medullary sarcoma.

DR. HAYES thought that if the growth originated in the bone there would be greater destruction of the medulla, and some evidence of absorption of the bone: the shadow of the shaft seemed to be perfectly normal.

THE PRESIDENT said that if any analogy could be drawn from

the action of sarcomata within and without the eye, he agreed that it was easy to have the walls practically intact. Such sarcomata grew very slowly for a long time inside the eye, but as soon as they got through the sclerotic they grew with great rapidity. The microscopic sections generally determined easily the internal origin of such growths.

DR. HARVEY, in reply, said he called it a periosteal sarcoma more or less from the clinical point of view, but a true periosteal sarcoma, involving only the periosteum, seemed to be exceedingly rare. It was very difficult to determine in which direction the tumour had broken through.

Tricuspid and Mitral Stenosis.

DR. MOORHEAD exhibited a heart showing tricuspid and mitral stenosis. The patient, a girl aged twenty-eight, had been admitted to hospital about ten days before suffering from symptoms of severe cardiac failure. On first admission she had a distinct thrill, and a distinct presystolic and systolic murmur, the presystolic being extremely loud over the ensiform cartilage. The presystolic murmur and the thrill both disappeared, and only the systolic murmur persisted. There was a suspicion that she might have, in addition to mitral, a tricuspid stenosis. Later on a double murmur was heard, and he regarded the second as due to aspiration by the right ventricle of blood through a stenosed tricuspid orifice in its diastole. The heart was found to weigh eighteen ounces. On the right side it showed enormous dilatation and hypertrophy of the right auricle. The terminal muscle stood out in a very striking way. Marked tricuspid stenosis was shown: at the *post-mortem* he could get only one finger through the orifice, the right ventricle was dilated and hypertrophied. On the left side there was a good deal of dilatation and hypertrophy of the left auricle, and extreme mitral stenosis was present. The mitral cusps were both calcified and extremely rigid. There was no recognisable aortic murmur, although the aortic valves were also sclerosed. There were some pulmonary infarcts. Both kidneys were extremely irregular on the surface, suggesting congenital lobulation. Looking more closely, he thought the condition might be the result of multiple infarction.

PROFESSOR O'SULLIVAN said it was difficult to decide as to the condition. He thought there was no doubt as to the presence of

arterio-sclerosis. Large depressions extending round a kidney, like a band that had pressed into it, were usually regarded as due to arterio-sclerosis. He looked on the kidney exhibited as one of that type, except that the sclerosis was sporadic.

THE SECRETARY cited a case of his own which closely resembled the case before them, except that in his case there was a patent foramen ovale suggesting a congenital origin for the tricuspid lesion. The kidneys were very curious. One could not think it arterio-sclerosis of the ordinary kind. There seemed to be a well marked cortex.

DR. MOORHEAD, in reply, said that he considered the tricuspid stenosis directly secondary to the mitral, and did not think pre-existing congenital deformity was to be looked for in every case.

Encysted Hæmato-pericardium.

DR. BOXWELL exhibited a specimen of encysted hæmato-pericardium from a man aged thirty-two, who had been sent to hospital in June, 1909, with what was supposed to be an enormously enlarged liver. He came to the conclusion that the liver was not so much enlarged as displaced. The patient gave a history of an attack of influenza in the previous March, during which he had suffered from a pain in his chest. The acute attack passed off in about a fortnight, but during convalescence he noticed a swelling in his abdomen, and he then became progressively weaker. When admitted to hospital early in June he was deeply cyanosed, and could rest only in the sitting posture or leaning forward. The liver dulness extended a hand's breadth below the costal margin, while its upper limit was depressed. He had a left-sided pleural effusion, and a large dull area in the middle of his chest. The heart sounds were rapid and feeble, but there were no murmurs or friction sound. He had no fever. Assuming the displacement of the liver, the diagnosis lay between pericardial effusion and intra-thoracic tumour. The pleural fluid was blood tinged, and this suggested tumour. As the patient was becoming rapidly worse, it was deemed advisable to puncture the pericardium with an exploring needle. This was done in the usual situation, and a syringe full of red blood was drawn off, which clotted, naturally, in a few minutes. Visions of a displaced and punctured auricle prevented further interference. The patient now developed a loud friction rub on the right side, and in the course of a day or two died. At the *post-mortem* a huge encysted hæmato-peri-

cardium was found; the inner compartment was quite complete, showing a wall of leathery fibrin, with papillary projections on the inner surface, and containing about a quart of red blood. The part of the cyst wall clinging to the ventricle was partially organised. In the outer compartment was a smaller quantity of blood-stained sero-fibrinous fluid. A large hæmorrhage was found in the right lung corresponding to the friction rub. The liver was but little enlarged. The case demonstrated once more the futility of exploring the pericardium with a needle instead of resecting a rib.

PROFESSOR O'SULLIVAN and DR. STOKES commented on the specimen.

Splenic Tuberculosis in a Pig.

PROFESSOR METTAM exhibited a tuberculous spleen of a pig. The normal weight of the spleen was about 140 grammes; the specimen weighed 1,410 grammes. The condition was one which was usually received as being of the nature of Hodgkins' disease, probably because there was always difficulty in finding the bacillus; but that morning he had found a couple of tubercle bacilli in the film.

SECTION OF SURGERY.

President—J. LENTAIGNE, P.R.C.S.I.

Sectional Secretary—A. J. BLAYNEY, F.R.C.S.I.

Friday, February 11, 1910.

THE PRESIDENT in the Chair.

Traumatic Paralysis of the Arm.

MR. C. A. BALL exhibited a young soldier who, last May twelve-months, was driving a wagon, when the horses ran away. Some canvas on the wagon fell on him, and he was unable to extricate himself, and became jammed between the horses. He fell on his shoulder, and sustained a fracture of the base of the skull and an injury to the brachial plexus of the left arm. He had recovered completely from the fracture, but there had been no improvement in the paralysis resulting from the injury to the plexus. The lesion had been apparently localised to the fifth and sixth cervical nerves, but the nerve of Bell and the nerve to the rhomboids were

perfectly normal, and the lesion must therefore be below the origin of these. He was anxious to know whether he should leave the patient alone or whether there would be any use in making an anastomosis between the sixth and seventh nerves.

Complete Tear of Brachial Plexus.

MR. BALL exhibited for MR. E. H. TAYLOR a patient with complete tear of the brachial plexus. The patient, a young man, aged nineteen, four months previously had become entangled in a threshing machine. A spindle had gone in above his clavicle just over the subclavian artery. He had now complete paralysis of all the muscles of the left arm, complete loss of sensation, and the subclavian artery had evidently become obliterated. It was now four months since the accident, and there was no sign of improvement in sensation.

Traumatic Asphyxia and Injury to Brachial Plexus.

MR. H. STOKES exhibited a case of traumatic asphyxia and injury to the brachial plexus in a young man whose coat had been caught in a revolving shaft, which wound up his clothes and collar and strangled him. He recovered consciousness twelve hours after the accident, which occurred a fortnight ago, and two days later he began to show ecchymosis of his eyes. His left arm was flaccid; there was a scar on the skin caused by the clothes. He had a certain amount of paralysis of the left arm. He had had complete loss of sensation all up the left arm, but it was now confined to the fingers.

DR. MOORHEAD described three similar cases which he had had in a single session three years ago. He did not think there would be any use in doing a nerve anastomosis unless there was some slight reaction to the galvanic current.

MR. W. S. HAUGHTON said his experience of immediate nerve suturing had been very satisfactory; but cases in which he had attempted suturing at intervals of five months to two years had not been satisfactory. He had tried grafting a piece of sciatic nerve from a freshly-killed sheep into a man, but the result was not satisfactory.

MR. W. I. DE C. WHEELER said it was difficult to find a good account of such cases in surgical literature, although they were fairly common.

DR. PEARSON said the injury in Mr. Ball's case was of the

type referred to during delivery, where pulling the head away from the shoulder stretched and ruptured the nerve trunks. He thought an anastomosis would be better than implanting into the seventh cervical. In implantations, sound nerves found their way to their original distribution, so that in a lateral implantation of the fifth and sixth into the seventh it was possible that the seventh might not supply the others, but keep to its own function.

DR. STOKES quoted a case of fracture of the clavicle and traumatic aneurysm. The man was operated on and was now alive, but with complete paralysis of the arm. It appeared that the scar of the aneurysm had involved the nerves, and he suggested something similar in Mr. Taylor's case.

THE SECRETARY said he had met a case of injury in which hæmorrhage occurred in the spinal cord, and the patient was left with a considerable amount of paralysis in sensation and motion. He thought Dr. Ball should make an attempt to find the site of the lesion, and suture the two ends of the nerve together.

THE CHAIRMAN said that if he had two such cases as Mr. Ball's and Mr. Taylor's, he would make an attempt to operate, but he would do so without much hope of success. His own experience of late suturing of torn nerves was not satisfactory; the operation was often an exceedingly difficult one. He thought there was no reason to doubt that the last case would probably recover, as the amount of injury was small compared with the other two cases.

MR. BALL, in reply, said the muscles in his case reacted to the galvanic current, and he would, if allowed, make an attempt to cut down and see what could be found.

MR. STOKES also replied.

Operation for Fractured Femur in a Child aged Four Years, with Skiagrams.

MR. W. I. DE C. WHEELER showed a case of a child aged four years who sustained an oblique fracture of the femur with marked over-riding of the fragments. Treatment by reduction and immobilisation in plaster for fourteen days failed to completely reduce the shortening. A long incision on the outer side of the thigh exposed the fracture, the sharp ends were imbedded in the muscles, but extension had little effect in bringing the fractured extremities into apposition. After some difficulty the fragments

were replaced and held together by the application of two Lane's plates and six screws. Three encircling aluminium bronze wires passing through holes in the steel plates and round the oblique ends of the fracture completed the operation. Recovery was non-interrupted with no shortening of the injured limb. He strongly advocated operation in fractures of the femur in cases where by X-rays it was evident that anything like good apposition of the fragments was impossible by non-operative methods. Pain and discomfort disappear after the operation, and little or no subsequent treatment is necessary. In a child no splint need be used after the first few days. In about six to eight weeks the patient is allowed to use the limb, the joints being freely movable by that time. Skiagrams were shown to illustrate the condition before and after operation.

DR. HARVEY said it was impossible by the old methods to get the bones in proper position by extension and counter-extension.

DR. STEVENSON said that an X-ray photograph should be taken through the plaster, as the removal of the plaster might bring the shortening again.

MR. STOKES recalled two cases in which he had had to remove wire after some years.

MR. HAUGHTON said that in cases of oblique fracture, when the attempt at reduction by extension and fixation was thoroughly tried, and the result failed to satisfy the X-rays, an operation was indicated to replace the bones truly.

THE PRESIDENT said he had himself taken out a good deal of wire, and also screws and plates, but he would not consider that the slight disadvantage of removal counterbalanced the advantage gained by operation.

MR. WHEELER, in reply, said the trouble experienced after prolonged plaster was very great compared with the trouble of taking out a screw if such became necessary. The great point in favour of operation in suitable fractures was that there was practically no after-treatment.

Multiple Bone Tuberculosis Two Years after Treatment.

THE PRESIDENT exhibited a case of multiple bone tuberculosis two years after treatment. The case was one of tuberculosis of the wrist, elbow, and face, and of the bones of both feet. Treatment had covered about a year, and had ended two years ago.

The patient was completely cured of the tuberculosis, notwithstanding recent statements that such was an impossibility. He excised the wrist, which was swollen to six times the normal thickness. She was scraped in the different tubercular foci, and he amputated two toes. The treatment was simplicity itself, and within the reach of any one. The wrist was left somewhat stiff, but he believed it could be made much freer by massage and by forcible extension and relaxation under an anæsthetic.

DR. HARVEY said he had tried fibrolysin in stricture of the urethra and in cicatrisation after burns, but was not in a position to know the ultimate result after the patients left the hospital.

MR. HAUGHTON inquired if the President had used cautery, or carbolic acid, or other corrosive in the treatment of the soft parts.

DR. STEVENSON asked if tuberculin had been used, or had the scraping been depended on to act in the same way as tuberculin did in increasing the power to overcome the tubercular deposits.

THE PRESIDENT said he had tried fibrolysin solely in a case, with perfect satisfaction. Another case was still under treatment, and had enormously improved. His method of treatment of tubercular disease was to scrape first, and then to introduce pure phenol in large quantities. In addition, he gave large doses of chloride of calcium. The patient had got two injections of tuberculin.

Oblique Fracture of the Humerus.

MR. W. S. HAUGHTON demonstrated a case of oblique fracture through the tuberosities and surgical neck of the humerus treated by plates and screws. The patient, a heavy woman, aged fifty, two months previously slipped on ice, fell back, and tried to save herself by putting out her arm backwards. The fracture was consequently due to indirect violence. X-rays showed that all efforts at reduction had failed. As union in the deformed position results in pain, stiffness and loss of power, it is a type of fracture in which modern methods of diagnosis and modern surgical technique will achieve great success. The type of fracture alluded to is one near a joint where we have a small piece of bone (the head of the humerus in this case) which cannot be held or controlled by external means; while the rest of the bone (the shaft) furnishes a long lever on which the muscles exercise great force and cause permanent deformity. The older methods fail to produce good results in this class of fracture, and it is in such cases that true

mechanical fixation by steel plates screwed in under precise aseptic conditions promises the most brilliant results. This case was so treated as shown in the skiagrams for which Mr. Haughton was indebted to his colleague, Mr. Stevenson. An incision was made along the anterior border of the deltoid, a few of the clavicular fibres were divided, and two plates screwed in. Passive motion of the joint was started five days afterwards, and continued daily since.

THE PRESIDENT said the result was most satisfactory and encouraging. The treatment was very young, and was capable of much development.

The case was discussed by DOCTORS PEARSON, WHEELER, HARVEY and HAYES.

MR. HAUGHTON, in reply, said he approached such cases with an open mind, and acted as the circumstances required. In the neighbourhood of the joints, Y-shaped plates often got one out of difficulty, but he usually used wire with satisfactory results.

TRACHEAL PUSHING.

TRACHEAL tugging is a sign of aortic aneurysm with which every student is familiar; it is one of those aids to diagnosis which by some inherent touch of the dramatic appeal strongly to human nature, though, as a matter of fact, the proportion of sufferers from this condition who exhibit it is not enormous. Recently two observers have independently described the reverse phenomenon of tracheal pushing—that is, a jerking of the larynx and trachea upwards instead of downwards with each beat of the heart. One of these cases was an example of that extremely rare condition, thoracic aneurysm in a child. The patient was exhibited not long ago at one of the London Societies. The other case takes precedence in point of time, for the details of it were published last October in the *Bulletin de la Société Médicale des Hôpitaux* by Dr. Hirtz. The tracheal tug is generally ascribed to pressure on the bronchus by an aneurysm situated on the concavity of the aortic arch. This author suggests, as the explanation of the reversed sign, that it may be due to pulsation in an aneurysm of the convexity of the arch, but even then it is rather difficult to comprehend against what structure exactly the pressure is supposed to be applied.—*The Hospital*, March 19, 1910.

SANITARY AND METEOROLOGICAL NOTES.

VITAL STATISTICS.

For four weeks ending Saturday, March 26, 1910.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended March 26, 1910, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 21.1 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,151,790. The deaths registered in each of the four weeks ended Saturday, March 26, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality :—

TOWNS, &c.	Week ending				Aver- age Rate for 4 weeks	TOWNS, &c.	Week ending				Aver- age Rate for 4 weeks
	Mar. 5	Mar. 12	Mar. 19	Mar. 26			Mar. 5	Mar. 12	Mar. 19	Mar. 26	
22 Town Districts	22.4	22.0	19.0	21.1	21.1	Lisburn -	13.6	18.2	18.2	40.9	22.7
Armagh -	20.6	13.7	20.6	27.5	20.6	Londonderry	25.2	18.0	9.6	22.8	18.9
Ballymena	33.5	11.4	28.7	14.4	22.7	Lurgan -	17.7	26.6	4.4	35.4	21.0
Belfast -	22.0	21.6	21.7	16.7	20.5	Newry -	8.1	12.6	12.6	29.4	15.8
Clonmel -	—	10.3	15.4	15.4	10.3	Newtown- ards	11.4	17.2	17.2	22.9	17.2
Cork -	23.3	20.5	19.9	22.6	21.6	Portadown -	15.5	10.3	25.8	15.5	16.8
Drogheda -	28.6	32.7	21.5	28.6	28.6	Queenstown	15.8	46.1	—	13.2	19.8
Dublin - (Reg. Area)	25.2	24.8	18.4	22.6	22.7	Sligo	4.8	4.8	19.2	14.4	10.8
Dundalk -	19.9	23.9	4.0	23.9	17.9	Tralee -	40.6	5.3	12.3	37.0	23.8
Galway -	38.8	7.8	3.9	27.2	19.4	Watertord -	17.5	27.3	13.6	11.7	17.5
Kilkenny -	14.7	24.6	9.8	44.2	23.3	Wexford -	28.0	28.0	28.0	28.0	28.0
Limerick -	13.7	15.0	19.1	27.3	18.8						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, March 26, 1910, were equal to an annual rate of 1.2 per 1,000, the rates varying from 0.0 in fifteen of the districts to 4.5 in Lisburn, the 9 deaths from all causes for that district including one from whooping-cough. Among the 125 deaths from all causes registered in Belfast are 10 from whooping-cough, 3 from measles, and one from diarrhoea. Of the 19 deaths from all causes registered in Londonderry one is from measles, and among the 20 deaths from all causes registered in Limerick are 2 from whooping-cough. Included in the 7 deaths from all causes registered in Drogheda is one from whooping-cough.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 402,928, that of the City being 310,298, Rathmines 37,047, Pembroke 28,948, Blackrock 9,013, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, March 26, 1910, amounted to 242—116 boys and 126 girls; and the deaths to 185—91 males and 94 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 23.9 in every 1,000 of the population. Omitting the deaths (numbering 10) of persons admitted into public institutions from localities outside the Area, the rate was 22.6 per 1,000. During the twelve weeks ending with Saturday, March 26, the death-rate averaged 25.3, and was 3.1 below the mean rate for the corresponding portions of the ten years 1900–1909.

The total deaths (amounting to 175) included one death from enteric fever and one from measles, 2 deaths from whooping-cough, one death from diphtheria, and 3 deaths from diarrhoeal diseases, 2 of the latter being those of infants under one month, and one was aged one year. In each of the three preceding weeks deaths from diphtheria had been 0, one, and one; deaths from enteric fever had been 2, 0, and one; deaths from diarrhoeal diseases had been 3, 4, and 2; deaths from measles had been

0, 0, and 0; and deaths from whooping-cough had been 3, 2, and one. There were 6 deaths from influenza, which in each of the three preceding weeks had caused 5, 6, and 7 deaths, respectively.

The deaths (14) from pneumonia (all forms) included 6 deaths from broncho-pneumonia, one death from lobar pneumonia, and 7 deaths from *pneumonia* (not defined).

The deaths (36) from all forms of tuberculous disease included 26 from tubercular phthisis (*phthisis*), 4 from tubercular meningitis, one death from *tabes mesenterica*; and one from tubercular peritonitis, and 4 deaths from other forms of the disease. Deaths from all forms of tuberculous disease in the three preceding weeks had been 25, 38, and 38 respectively.

There were 4 deaths from carcinoma, and 2 deaths from cancer, malignant disease (undefined).

Three deaths of prematurely born infants were recorded.

Convulsions were the cause of death in 4 instances, all being of infants under one year of age.

Diseases of the heart and blood-vessels caused 20 deaths, and of 35 deaths from diseases of the respiratory system bronchitis caused 32 deaths.

The death of one child, aged one year and four months, was caused by accidental scalding, and one death by suicidal swallowing of an irritant poison was registered.

In three instances the cause of death was "uncertified," there having been no medical attendant during the last illness; these cases comprise the death of one infant under one year of age and the deaths of 2 persons aged 60 years and upwards.

Fifty-two of the persons whose deaths were registered during the week were under 5 years of age (34 being infants under one year, of whom 10 were under one month old), and 52 were aged 60 years and upwards, including 28 persons aged 70 and upwards, of whom 10 were octogenarians.

The Registrar-General points out that the names of the cause of death printed above in *italics* should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," and the "Tuberculosis Prevention (Ireland) Act, 1908," as set

forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. R. A. O'Donovan, Medical Superintendent Officer of Health for Kingstown Urban District; and by Dr. Bailie, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended March 26, 1910, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain) ^a	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Whooping-cough	Cerebro-spinal fever	Tubercular Phthisis (<i>Phtisis</i>)	Total
City of Dublin	Mar. 5	-	•	•	8	-	-	4	-	12	12	11	-	•	-	25	53
	Mar. 12	-	•	•	12	-	-	4	-	12	12	5	-	•	-	21	47
	Mar. 19	-	•	•	10	-	-	4	-	12	12	9	-	•	-	14	42
	Mar. 26	-	•	•	5	1	-	3	-	1	4	18	-	•	-	20	52
Rathmines and Rathgar Urban District	Mar. 5	-	•	•	-	-	-	-	-	-	-	1	-	•	•	•	1
	Mar. 12	-	•	•	1	-	-	1	-	-	-	-	-	•	•	•	2
	Mar. 19	-	•	•	-	-	-	5	-	-	1	-	-	•	•	•	6
	Mar. 26	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
Pembroke Urban District	Mar. 5	-	-	-	1	-	-	1	-	-	-	1	-	-	-	•	3
	Mar. 12	-	-	-	1	-	-	-	-	-	-	-	-	-	-	•	2
	Mar. 19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-
	Mar. 26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-
Blackrock Urban District	Mar. 5	-	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-
	Mar. 12	-	•	•	1	-	-	-	-	-	-	-	-	•	-	•	1
	Mar. 19	-	•	•	1	-	-	-	-	-	-	-	-	•	-	•	1
	Mar. 26	-	•	•	1	-	-	-	-	-	-	-	-	•	-	•	1
Kingstown Urban District	Mar. 5	-	•	•	-	-	-	-	-	-	1	-	-	•	•	-	1
	Mar. 12	-	•	•	-	-	-	1	-	-	-	-	-	•	•	-	1
	Mar. 19	-	•	•	-	-	-	-	-	-	-	-	-	•	•	-	-
	Mar. 26	-	•	•	-	-	-	-	-	-	-	-	-	•	•	-	-
City of Belfast	Mar. 5	-	•	•	12	-	-	7	1	1	2	1	1	•	•	46	74
	Mar. 12	-	•	•	21	-	-	4	-	-	1	8	-	•	•	21	55
	Mar. 19	-	•	•	10	-	-	2	-	-	3	7	-	•	•	20	42
	Mar. 26	-	•	•	12	1	-	2	-	1	1	4	-	•	•	19	40

^a Continued Fever.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended March 26, 1910, 2 cases of measles

were admitted to hospital, 5 were discharged, and 3 cases remained under treatment at its close.

Three cases of scarlet fever were admitted to hospital, 18 were discharged, and 57 cases remained under treatment at the close of the week. This number is exclusive of 12 convalescents from the disease under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital. At the close of the three preceding weeks the cases in hospital had been 66, 68, and 72 respectively.

Three cases of diphtheria were admitted to hospital, 10 were discharged, there was one death, and 36 patients remained under treatment at the close of the week. The cases in hospital at the close of the three preceding weeks had numbered 46, 46, and 44 respectively.

Five cases of enteric fever were admitted to hospital during the week, 8 were discharged, there was one death, and 26 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 10 cases of pneumonia were admitted to hospital, 10 were discharged, there was one death, and 36 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, March 26, in 76 large English towns, including London (in which the rate was 13.5), was equal to an average annual death-rate of 13.9 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 15.3 per 1,000, the rate for Glasgow being 15.5, and for Edinburgh 12.3.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended March 26. From this report it appears that of a total of 46 cases notified, 25 were of scarlet fever, 12 of phthisis, 6 of diphtheria, 2 of enteric fever, and one of cerebro-spinal fever.

Among the 381 cases of infectious diseases in hospital at the close of the week were 195 cases of scarlet fever, 72 of measles, 57 of phthisis, 10 of whooping-cough, 22 of diphtheria, 9 of erysipelas, 6 of chicken-pox, 6 of enteric fever, and one of cerebro-spinal fever.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of March, 1910.

Mean Height of Barometer,	-	30.106 inches.
Maximal Height of Barometer (23rd, at 9 a.m.),		30.594
Minimal Height of Barometer (9th, at 3 40 p.m.),		29.320 „
Mean Dry-bulb Temperature,	-	44.0°.
Mean Wet-bulb Temperature,		41.5°.
Mean Dew-point Temperature,	-	38.6°.
Mean Elastic Force (Tension) of Aqueous Vapour		.235 inch.
Mean Humidity,	-	82.2 per cent.
Highest Temperature in Shade (on 20th),	-	55.2°.
Lowest Temperature in Shade (on 13th and 29th),		33.9°.
Lowest Temperature on Grass (Radiation) (29th),		28.3°.
Mean Amount of Cloud	-	58.4 per cent.
Rainfall (on 11 days),	-	.923 inch.
Greatest Daily Rainfall (on 1st),	-	.400 inch.
General Directions of Wind,	-	W., S.S.E.

Remarks.

Opening with a heavy rainfall (.400 inch) and a strong S.W. wind, which freshened to a gale during the night of the 1st, March, 1910, proved quiet, fine, and dry—all characteristics in marked contrast to those of the previous two months of the present year. The rainfall was moderate—.923 inch on 11 days. Neither hail nor snow fell in Dublin, and after the 17th the precipitation amounted to only .015 inch in the rain-gauge. On the 1st a large and deep atmospheric depression spread slowly over Ireland from the Atlantic, but its easterly progress was quickly stayed by an anticyclone which pushed westwards across Central Europe from Russia. The change was attended by a downpour of rain in the west of Ireland—Blacksod Point in Mayo and Valentia in Kerry each receiving 2.34 inches in the 96 hours ended 7 a.m. of the 5th. The second week—6th—12th—was unsettled and showery, but with generally open weather. In the third week—13th—19th—the weather assumed a more north-westerly type, and from this time to the close the British Islands remained under the favourable influence of a

large anticyclone of even more than ordinary staying power. The weather was in consequence fine, dry, and quiet for the most part, if sometimes overcast and dull. On the 26th rain threatened, and about half an inch was recorded along the west coast of Ireland, but in Dublin there were only a few light showers. The anticyclonic calm of the last few days was responsible for a succession of cold nights and foggy mornings. A fine aurora borealis was seen in Scotland and the North of Ireland on the night of the 28th.

In Dublin the arithmetical mean temperature (44.8°) was 1.1° above the average (43.7°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 44.0° . In the forty-six years ending with 1910, March was coldest in 1867 and 1883 (M.T. = 39.0°), and warmest in 1903 (M.T. = 48.1°). In 1909 the M.T. was 40.8° .

The mean height of the barometer was 30.106 inches, or 0.190 inch above the corrected average value for March—namely, 29.916 inches. The mercury rose to 30.594 inches at 9 a.m. of the 23rd and fell to 29.320 inches at 3 40 p.m. of the 9th. The observed range of atmospheric pressure was, therefore, 1.274 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 44.0° . Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* $\times .485$) the M.T. becomes 44.6° . The arithmetical mean of the maximal and minimal readings was 44.8° , compared with a thirty-five years' (1871–1905) average of 43.7° . On the 20th the thermometer in the screen rose to 55.2° —wind, W.; on the 13th the temperature fell to 33.9° —wind, W.N.W. The same reading was recorded on the 29th—wind, E.N.E. The minimum on the grass was 28.3° on the 29th.

The rainfall was .923 inch, distributed over 11 days. The average rainfall for March in the thirty-five years, 1871–1905, inclusive, was 1.910 inches, and the average number of rain-days was 17.0. The rainfall, therefore, and the rain-days were much below the average. In 1867 the rainfall in March was very large—4.972 inches on 22 days. On the other hand, the smallest March rainfall was .288 inch on 8 days in 1893. In 1909 the rainfall was 2.693 inches on 19 days.

The atmosphere was foggy on the 24th, 28th, and 30th. High winds were noted on 8 days, reaching the force of a gale on only one day—the 2nd. A solar halo appeared on the 15th, and a

lunar halo on the 27th. Temperature reached or exceeded 50° in the screen on 18 days, compared with 6 days in 1909, 10 days in 1908, 25 in 1907, 17 in 1906, 20 in 1905, 10 in 1904, 18 in 1903, 23 in 1902, and only 6 in 1901. It never fell to 32° in the screen. The minima on the grass were 32° or less on 11 nights, compared with 14 nights in 1909, 16 in 1908, 9 in 1907, 12 in 1906, 8 in 1905, 13 in 1904, 4 in 1903, 5 in 1902, and 11 in 1901.

The rainfall in Dublin during the three months ending March 31st amounted to 7.674 inches on 52 days, compared with 4.550 inches on 41 days in 1909, 6.367 inches on 58 days in 1908, 3.666 inches on 42 days in 1907, 7.291 inches on 59 days in 1906, 5.378 inches on 46 days in 1905, 7.938 inches on 55 days in 1904, 9.126 inches on 61 days in 1903, 5.114 inches on 43 days in 1902, 5.656 inches on 46 days in 1901, and a thirty-five years' (1871-1905 inclusive) average of 6.130 inches on 50.0 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Mr. William H. Clark, B.A., reports that the mean height of the barometer was 30.101 inches, the highest reading observed being 30.587 inches at 9 a.m. of the 23rd, the lowest, 29.372 inches at 9 p.m. of the 9th. The mean temperature was 45.0° , the mean dry-bulb reading at 9 a.m. and 9 p.m. being 44.6° . The screened thermometers rose to 56.3° on the 7th, and fell to 31.7° on the 26th. The grass minimum was 21.5° on the 29th. The mean daily maximum was 51.2° , and the mean daily minimum, 38.7° . Rain fell on 11 days to the amount of .780 inch, .320 inch being measured on the 1st. The number of hours of bright sunshine registered by the Campbell-Stokes sunshine recorder was 97.15, giving a daily average of 2.94 hours. There were 8.6 hours of bright sunshine on the 5th. The mean temperature of the soil at 9 a.m. at a depth of one foot was 43.3° ; at a depth of 4 feet it was 44.3° . During the month the subsoil temperature at 4 feet increased continuously, with the exception of one slight decrease of 0.4° in the middle of the month, from 43.2° on the 1st to 45.1° on the 31st.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, 1.905 inches of rain fell on 10 days. The maximal fall in 24 hours was .900 inch on the 1st.

Dr. L. T. Burra, Resident Medical Officer, reports that the rainfall at the Royal National Hospital for Ireland for Consumption, Newcastle, Co. Wicklow, was 2.25 inches on 11 days, the maximal fall in 24 hours being 1.20 inches on the 1st. The mean air temperature was 42.9° —the extremes being—highest, 53.8° on the 20th; lowest, 30.5° on the 1st. The mean maximum was 48.6° , the mean minimum, 37.1° .

Captain Edward Taylor, D.L., returns the rainfall at Ardgillan, Balbriggan, Co. Dublin, at 1.33 inches on 9 days. The amount was .74 inch below the average, and the rain-days were 8 in defect. Up to March 31st, the rainfall at Ardgillan amounted to 7.56 inches, or 1.33 inches in excess of the average, and the rain-days were 48, or 2 below the average number for the first quarter of the year. The thermometers in the screen rose to 54.0° on the 20th and fell to 30.0° on the 13th.

Mr. T. Bateman returns the rainfall at The Green, Malahide, Co. Dublin, at .75 inch on 8 days, compared with 3.473 inches on 24 days in 1905, 1.071 inches on 15 days in 1906, 1.677 inches on 15 days in 1907, 2.450 inches on 20 days in 1908, and 2.901 inches on 17 days in 1909. The greatest rainfall in 24 hours was .21 inch on the 8th. The extremes of temperature in the shade were—highest, 53.5° , on the 20th; lowest, 26.0° , on the 31st. The mean temperature was 40.3° .

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 10 days to the amount of 1.38 inches, compared with 2.20 inches on 13 days in 1901, 1.98 inches on 18 days in 1902, 4.53 inches on 28 days in 1903, 2.50 inches on 21 days in 1904, 3.31 inches on 28 days in 1905, 1.80 inches on 17 days in 1906, 1.62 inches on 18 days in 1907, 3.56 inches on 24 days in 1908, and 3.52 inches on 22 days in 1909. The greatest daily rainfall was .63 inch on the 1st. The temperature in the shade ranged from 55° on the 2nd and 20th to 34° on the 12th and 29th. The mean shade temperature was 45.0° , compared with 41.2° in 1901, 46.4° in 1902, 45.7° in 1903, 41.1° in 1904, 45.0° in 1905, 43.9° in 1906, 46.3° in 1907, 41.8° in 1908, and 40.3° in 1909. There was a slight hail shower on the 18th.

Dr. C. Joynt, F.R.C.P.I., returns the rainfall at 21 Leeson Park, Dublin, at .895 inch on 11 days, .385 inch being measured on the 1st.

Mrs. George B. Symes reports a rainfall of .70 inch on 8 days at Druid Lodge, Killiney, the greatest measurement in 24 hours

being .15 inch on the 7th. At Killiney the average rainfall for March in the 24 years, 1885-1908, inclusive, was 1.948 inches on 17 days. Since January 1, 1910, the rainfall at Druid Lodge has been 6.76 inches on 49 days.

Dr. W. S. Ross sends the following report for the first quarter of 1910 from Clonsilla, Greystones, Co. Wicklow :—

JANUARY.—Rainfall: 3.27 inches, on 20 days; maximal fall in 24 hours, 1.75 inches on 28th. Temperature: maximum, 56° on 3rd; minimum, 22° on 27th. Mean max., 44.4° ; mean min., 35.8° ; mean temp., 40.1° .

FEBRUARY.—Rainfall: 3.89 inches, on 23 days; maximum, .62 inch on 19th. Temperature: maximum, 56° on 7th; minimum, 28° on 23rd. Mean max., 47.4° ; mean min., 39.5° ; mean temp., 43.5° .

MARCH.—Rainfall: 2.14 inches, on 10 days; maximum, .95 inch on 2nd. Temperature: maximum, 54° on 21st; minimum, 32° on 1st. Mean max., 45.4° ; mean min., 38.7° ; mean temp., 42.1° .

During the quarter the rainfall amounted to 9.30 inches on 53 days.

Mr. W. Miller registered 2.49 inches of rain at Cork on 12 days. The greatest fall in 24 hours was .64 inch on the 14th. The rainfall was 0.18 inch less than the average for March. Only 0.12 inch fell during the last 17 days. The rainfall of the first quarter of 1910 was 10.88 inches, or 1.02 inches more than the average. The rain-days in the quarter numbered 63, being 11 over the average.

The Rev. Arthur Wilson, M.A., writing from Dunmanway Rectory, Co. Cork, states that 3.76 inches of rain fell there on 14 days, 1.24 inches being measured on the 1st and .95 inch on the 14th. No rain fell from the 18th, except .12 inch on Easter Day, the 27th. The rainfall of the first quarter of 1910 at Dunmanway equals 19.17 inches.

At the Ordnance Survey Office, Phoenix Park, Dublin, rain fell on 11 days to the total amount of .674 inch, the largest measurement being .165 inch on the 8th. The duration of bright sunshine was 105.5 hours, of which 9.4 hours occurred on the 29th.

PERISCOPE.

THE PATHWAY OF TUBERCULAR INFECTION.

IN the *Lancet* for April 2, 1910, will be found a thoughtful paper by Dr. Frederic Wood Jones, Lecturer in Anatomy in the University of Manchester, entitled "An Anatomical Inquiry into the Pathway of Tubercular Infection." The work of Calmette and Guérin, of Vansteenberghe, Grysez, and Ravenal, and of Symmers and Whitla, has shown, beyond all dispute, that a route for invasion is provided for the *Bacillus tuberculosis* by way of the alimentary canal. In the light of this new knowledge, the author of the present paper offers an interesting anatomical explanation of the incidence of tubercular disease. The problems to be solved were these: Why does spinal caries so commonly manifest itself in the lower and mid-dorsal regions; and why does phthisis, in the adult, so constantly show itself first above this level, and so very frequently in one definite spot—namely, "from one to two inches below the extreme apices" (Percy Kidd)? Again, why, in children, does tubercular disease so commonly manifest itself as abdominal, or generalised, tuberculosis; and why, when it attacks the lungs in children, is it not at all uncommon for it to start as a basal phthisis? The facts point clearly to the absorbent system as the pathway of infection in pulmonary and spinal tuberculosis. In the posterior mediastinum the thoracic duct is most intimately related to the spinal column from the 6th dorsal to the 2nd lumbar vertebra—that is, precisely those vertebræ, the bodies of which are most subject to tubercular infection. The structure most intimately related to the lungs at the site of election of phthisis is the lymphatic channel passing upwards and forwards over the pleura to join the subclavian vein. In this situation the thoracic duct (or the right lymphatic duct) lies directly upon the pleura, and in more intimate relation to it than any other structure in the thorax or neck. Tuberculosis of the thoracic duct is known to occur, and such early symptoms of pulmonary phthisis as wasting, anæmia, weakness, loss of appetite, and especially distaste for fat in every form, are suggestive of the possibility

that the duct is involved as the primary seat of the disease. If the mesenteric lymphatics most readily carry China ink, as in the experiments of Vansteenbergh and Grysez, from the stomach to the mesenteric glands, we may take it that tubercle bacilli may be so carried in children, and so the advent of tubercular peritonitis is not difficult of explanation. And, if the lymphatics of the diaphragm readily carry infection to the thorax in children, then the basal phthisis of childhood is explained. The varying local incidence of tubercular infection in children and in adults would appear to depend on the fact that with increasing age the abdominal lymphatics become more constricted, and the lymph circulation becomes more centred on the thoracic ducts. Dr. Jones's paper is illustrated by four figures, which make his line of argument quite plain.

ACCOMMODATIVE IRIDOPLEGIA.

With the Argyll-Robertson pupil, which reacts to accommodation but not to light, every one is familiar. The converse of this, a pupil which reacts to light but not to accommodation, is much rarer. Such accommodative iridoplegia has been described by three observers during 1909 in cases of diphtheritic paralysis, a condition in which apparently it had not been observed before. Two of the cases were seen in this country (by Dr. H. H. Tooth and Mr. S. Stephenson respectively), and the third at Munich by a local ophthalmologist. The condition is unmentioned even in the most exhaustive text-books. The details of Mr. Stephenson's case are given in the *Ophthalmoscope*. The patient is a boy of nine years old, who had suffered from an "ulcerated throat," which was not treated with antitoxin because of negative bacteriological findings. Five weeks later he was found to be pronouncing nasally and to have occasional regurgitation of fluids. The knee-jerks were almost, but not quite, lost; but there was no other parietic lesion, except that in the iris. Ocular movements, including convergence, were good, and the pupils reacted well and promptly to light. Accommodation was practically lost, as a + 7 D sphere was required for reading No. 1 Jaeger type at 20 cm. The fundi were normal. The treatment adopted comprised rest in bed and abstention from reading, with strychnin and phosphoric acid as medicines. In six weeks every sign of paresis disappeared, except that the knee-jerks remained rather sluggish. Accommodation and the accommodation reflex both returned to

normal. Mr. Stephenson suggests that this symptom might be more often found if systematically searched for.—*The Hospital*, January 22, 1910.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Maltine.

THE MALTINE MANUFACTURING CO., LTD., have sent us samples of "Maltine Plain," "Maltine with Cod Liver Oil," and "Maltine with Pepsin and Pancreatin." The products of this old established Company, so long favourably known to the medical profession, continue to be well in advance of modern development in physiological chemistry, judging from the samples recently submitted to us. "Maltine Plain" is now standardised to such a strength that *one* part of "Maltine" converts *ten* parts of starch into maltose and dextrin. This will be a great help to physicians in the treatment of amylaceous dyspepsia, and in the determination of doses in particular cases. "Maltine" is not an ordinary extract of malt. It is made largely from wheat and oats, and is, therefore, superior to the latter in dietetic, nutritive and palatable properties, in addition to its high amylolytic power. The fluidity of maltine will also be found most convenient to patients. It pours out freely from the bottle, leaving no waste. We have found "maltine" sufficiently diastasic to be an efficient substitute for citrate of sodium in the prevention of coarse curdling of milk in milk diets, and when used in this connection in infant feeding it controls constipation—a most useful quality. "Maltine with Cod Liver Oil" is an elegant preparation for the exhibition of cod liver oil. It is tasteless, odourless, and perfectly fluid. It contains 30 per cent. (by volume) of pure cod liver oil in an emulsified and non-separable condition. It is most palatable, and should prove acceptable to the most fastidious taste. The compound is also actively diastasic, so that it is a digestant as well as a source of emulsified oil. "Maltine with Pepsin and Pancreatin" contains, in addition to the diastasic ferments of malt, the proteolytic and amylolytic ferments of pancreatic juice. It is, therefore, a complete and powerful food digestant, and should form a most valuable adjunct to the treatment of chronic and general dyspepsia, and in feeble assimilation. It is also an excellent vehicle for the administration of such

drugs as potassium iodide, arsenic, and salicylic acid, which are apt to produce digestive disturbances. A notable point is that the pancreatin used in this preparation is specially resistant to the acid peptic digestion, so that a proper digestive action is subsequently secured in the alkaline contents of the small intestine.

Carnrick's Liquid Peptonoids.

WE have received from Messrs. Carnrick & Co., Ltd., a sample of this preparation, which has a well deserved reputation among the Medical Profession as a dialysed nutrient, capable of sustaining life, and carrying a patient over a crisis when ordinary means have failed. The nutrients present we find to be in the form of peptones, albumoses, and maltose, bodies which are ready for immediate absorption without effort on the part of the patient, and the preparation is, therefore, tolerated and retained by the stomach when foods needing digestion are rejected. Its properties are such as to also render it a gentle stimulant, and a peptogenic tonic during convalescence after influenza and acute disease. Its composition and characters indicate it for rectal feeding either with saline or other mediums as an easily absorbed fluid, leaving little or no residue, and great success has attended its use lately in this direction.

Tabloid of Lodal.

THIS newly introduced uterine tonic is supplied to the Medical Profession by Messrs. Burroughs, Wellcome & Company in one-grain (0.065 gramme) tabloids. Lodal (6:7 Dimethoxy-2-methyl-3:4-dihydroisoquinolinium chloride) is prepared by the oxidation of laudanisin (an alkaloid occurring in opium) in a manner analogous to the preparation of cotarnin from narcotin. The physiological action of "Lodal" resembles that of cotarnin in producing tonic contraction in the pregnant and non-pregnant uterus. It differs, however, in that "Lodal" exercises more effect on the heart, slowing and strengthening the beat, and producing a rise in blood-pressure in which vaso-constriction is a definite factor. It has much the same effect on the higher centres, but its action in this respect is more powerful than that of cotarnin. Clinically it has been used with good effect in cases of uterine hemorrhage. One tabloid may be swallowed with a little water three times a day.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XVI.—*Notes on a Case of Acute Leukæmia.*^a By
T. GILLMAN MOORHEAD, M.D., D.P.H., F.R.C.P.I.;
Physician, Royal City of Dublin Hospital.

OUR knowledge of leukæmia or leucocythæmia has advanced far since Velpeau first, in 1827, recognised the association of changes in the blood and enlarged spleen. To Virchow and Hughes Bennett belong the credit of definitely differentiating the disease, and since then the development of our knowledge has been for the most part gradual, and the landmarks, though important, are few in number. The separation into lymphatic and splenic varieties by Virchow himself; the discovery by Neumann of alterations in the red marrow; Ehrlich's work on the white cells of the blood; Ebstein's discovery of acute lymphatic leukæmia; the more recent description of an acute myelogenous type; and, lastly, the unification of the disease aimed at and suggested by the work of Pappenheim, Grawitz, Dorothy Reed, and others constitute the most important steps that have led us to our present position.

^a Read before the Section of Medicine of the Royal Academy of Medicine in Ireland on Friday, May 6, 1910.

Many problems still remain for solution, not only as regards ætiology and treatment, but also in the relationships which exist between the leukæmias and allied or similar diseases; and in connection with so-called acute leukæmia the most urgent question seems to be the determination whether the blood picture and other pathological changes, which we recognise, are to be regarded as sufficient to justify us in regarding acute leukæmia as a morbid entity, or whether we should look upon the blood changes at any rate as merely a symptom common to a group of acute infections. One of the ways in which this question must be answered is by the more extended use of careful blood examinations.

Clinically, acute leukæmia presents itself in many different forms. Emerson, in a recent paper in the "Johns Hopkins Hospital Bulletin," distinguishes the following varieties:—(1) A common form, suggesting chronic leukæmia, except for its acuteness and severity. In this form there is glandular and usually splenic enlargement. (2) An acute infectious type, resembling streptococcic septicæmia, or other well-known acute fevers. In some cases, indeed, streptococci have been isolated from the marrow, lymph glands, and other parts of the body. (3) A hæmorrhagic form, resembling purpura hæmorrhagica. (4) An acute cachectic group, in which the prominent symptoms are sudden, inexplicable weakness, loss of flesh, and shortness of breath. In none but the first variety are the lymph glands as a rule enlarged, but in all of them stomatitis in varying degrees of severity is an early symptom, and in some, vomiting and diarrhœa, cutaneous lesions, and pulmonary inflammations are met with. The case which I wish to report at present, and of which the following are the notes, seems to belong to the second group.

CASE.—The patient was a married man, aged twenty-eight, by occupation a tailor, whom I was asked to see on the afternoon of April 5th, 1910, and who shortly before my seeing him had passed

into a state of coma. The history that I obtained was briefly as follows:—The patient attended at Mr. Moore's extern dispensary on April 1st, and asked to have some teeth extracted. On examination at the time it was found that his gums were spongy and bleeding, and as he looked ill, Mr. Moore admitted him to the hospital. Later the patient stated that he had not been well during the previous three weeks, and was inclined to attribute his illness to a cold caught when playing football. The symptoms of which he had complained were headache, sleeplessness, pains in the bones, bleeding from the mouth, and loss of appetite.

Previous history.—The patient had always been healthy and active, and had had no previous illness, except diphtheria three and a half years ago, and a troublesome septic sore on the knee three months ago, which had been caused by injury. There was no history of alcoholism or venereal disease. His appetite had never been good, and he had lived much on bread and tea, especially during the last three weeks. He had two children, both healthy; his parents, several brothers and sisters, and his wife were all alive and well.

On examination the patient was found to be sallow and anæmic; the surface of the body was covered with a number of small petechiæ, more especially over the thighs, and on the right buttock there was a considerable ecchymosis; the gums were swollen, bleeding, and foul; the tonsils also were swollen and bleeding, and so was the soft palate; there was one enlarged gland in the right submaxillary region, which was tender to the touch and apparently septic; no other enlarged glands could be detected; the lungs and heart were normal; liver slightly enlarged; spleen not palpable; urine albuminous; temperature, 98.6° F.

On the supposition that the symptoms might be due to scurvy, the patient was placed on anti-scorbutic treatment, and apparently improved, his temperature remaining normal. On April 4th in particular he expressed himself as feeling much better, talked and laughed, and looked well. On the next morning he seemed drowsy, and a little incoherent in his speech, and rapidly passed into the state of coma in which I saw him at 2 p.m. On examination then there was little to add to what I have already related. The patient was deeply comatose; the pupils were equal and reacted to light; the reflexes were dulled; a catheter specimen of urine contained four parts of albumen per 1,000, a good deal

of blood, and some blood and granular casts; there was no acetone or diacetic acid. The unusual character of the symptoms suggested the advisableness of making a blood examination, and this immediately established the diagnosis of acute leukæmia. In addition to ordinary examination of the blood, I withdrew 10 c.cs. from the cephalic vein for bacteriological examination, but cultures of this on broth and agar proved sterile. As showing the tendency to subcutaneous hæmorrhages, it is worth noting that the irritation caused by washing the arm, preparatory to obtaining blood, produced almost immediately a diffuse subcutaneous hæmorrhage. The patient died a few hours after I saw him.

Blood.—A blood count gave the following result :—

Red cells	-	-	2,450,000 per c.mm.
White cells	-	-	347,500 „ „
Hæmoglobin	-	-	60 per cent.
Hæmoglobin index	-	-	1.2 (q.p.).
Ratio of white to red cells	-	-	1 : 7 (q.p.).

The high hæmoglobin index is worthy of note. It is common in these cases, as M'Crae has pointed out.

Films of blood were stained by Leishman's, Jenner's, Giemsa's and Ehrlich's methods. The large majority of white cells present were mononuclear and of the type described as large lymphocyte, but great variation existed in the appearance of individual cells. In a differential count of 1,000 white cells, the following figures were arrived at :—

		Per cent.	Per c.mm.
Large lymphocytes	-	90.3	313,792
Small lymphocytes	-	2.3	7,992
Neutrophile cells	-	5.1	17,722
Eosinophile cells	-	1.5	5,212
Hyaline cells	-	.8	2,780

Four nucleated red cells, all normoblasts, were found in the course of this enumeration. No other abnormal forms of red cells were found. As already stated, great variation existed in the cells classified as large lymphocytes. Some of these were partly disintegrated; numerous protoplasmic bulgings were seen; in most the nucleus was spherical and less basophile than the surrounding protoplasm; in a few indented nuclei were found, and occasionally a distinct nucleolus was evident. In the slides stained by Giemsa's method, the protoplasm of some cells showed

faint basophile granulations. Graduations in size from the ordinary small lymphocyte up to the prevailing type of cell, which was from twice to three times the size of a red cell, were seen. The cells classed as neutrophiles were for the most part devoid of granules, and the name was applied on account of the characteristic nucleus. During the actual count of 1,000 cells no myelocytes were seen, but in more extensive searches a few undoubted eosinophile myelocytes were found. When the list showing the actual number of each form of white cells present per c.mm. blood is studied, an interesting fact is revealed, and that is that both neutrophile and eosinophile cells are present in much greater absolute number than normal. This fact will further be referred to.

A *post-mortem* examination was performed about three hours after death. The lungs were covered with small subpleural hæmorrhages, but were otherwise microscopically and macroscopically normal. Similar hæmorrhages were present on the surface of the heart; the cardiac valves and the aorta were normal; microscopically, cloudy swelling of the myocardium; no definite thymic tissue was found, and there was no enlargement of the thoracic lymph glands. The liver was enlarged, weighing 1,983 grammes; there was considerable vascular engorgement, some cloudy swelling of the liver cells, and slight infiltration of the connective tissue of the portal systems with large mononuclear cells. The kidneys were big, and much engorged; the capsule stripped easily; there was pronounced parenchymatous degeneration; and in places under the capsule small accumulations of round mononuclear cells. The spleen did not extend as far as the costal margin, but was big, weighing 379 grammes. The Malpighian corpuscles were well defined, and not enlarged; the pulp was much more cellular than normal, the predominant cells being large and mononuclear. Cultures made from the spleen proved sterile, and no organisms were found in Gram-stained sections. The peritoneal surface of the bladder and intestines was flecked with numerous small hæmorrhages; the only other abnormality found in the alimentary tract was prominence of the Peyer's patches, with occasional small hæmorrhages into them. Pancreas and adrenals normal; tonsils enlarged, with diffuse hæmorrhages present. Several lymph glands were examined: some of the mesenteric glands were calcareous; others were redder than normal, but not enlarged. The lymph sinuses were distended with large mononuclear cells,

but the lymph nodes could be easily distinguished. A differential count of the cells observed in smears made from the marrow gave the following result, excluding red cells :—

Large lymphocytes	-	95.5 per cent.
Small lymphocytes	-	1.5 „
Eosinophiles	-	3.0 „

These figures show that the marrow had undergone a very complete lymphadenoid change. The large non-granular cells were apparently identical with those found in the blood, and like those showed numerous small variations.

Sections of all the organs were stained to show the presence of iron, but with the exception of the kidney, which showed traces, none was found.

The acuteness of the case, the paucity of symptoms, the negative results obtained from cultures made from the blood and the spleen, and the large absolute number of eosinophiles present in the blood justify me, I think, in placing it on record.

In thinking over it, numerous points of interest present themselves, and it was at first my intention to deal with some of them in detail, but a review of the literature has shown me that almost every point of importance has already been fully dealt with by Dorothy Reed, Kelly, Whipham, and others, and, in consequence, I will content myself by a brief reference to one or two outstanding features. The origin and nature of the cells that are found in such numbers in the blood is the principal question to be referred to. Ehrlich's view was that two quite distinct varieties of leukæmia existed: the one due to primary disease of the lymph glands; the other to primary disease of the bone-marrow. Pappenheim, on the other hand, ascribes a preponderating importance to the bone-marrow in all cases of leukæmia, and cites as important evidence cases of the kind I have just detailed in which lymphatic leukæmia has occurred with slight or no changes in the lymph glands, but with important changes in the marrow. That the marrow normally contains some cells of lymphoid nature is now universally admitted, and so

there is no longer any *primâ facie* evidence against Pappenheim's view. Ehrlich believes that the marrow changes are the result of invasion by lymphoid cells which have originated in the lymphoid tissues, while Pappenheim holds that the changes are due to active proliferation of the lymphoid cells pre-existing in the marrow. In my case the marrow was almost entirely lymphoid, while in the spleen and lymph glands there was little or no evidence of active proliferation of cells. The spleen pulp and the lymph sinuses were, indeed, packed with large lymphocytic cells, but there was no evidence to prove that these came from the Malpighian corpuscles, or lymph nodes, inasmuch as the cells of those structures were easily distinguishable from the larger cells in other parts of both organs. One can, therefore, adopt Dorothy Reed's conclusion in reference to her own case, that we have in the present case a lymphocytosis arising from proliferation of lymphoid cells in the bone marrow, and death occurring before any other organ in the body showed active involvement. The conclusion arrived at is, in fact, that the changes in the lymph glands and spleen are due to invasion by cells taking origin from the marrow, instead of the reverse being the case as Ehrlich maintains. Further evidence of marrow stimulation is to be found, I believe, in the large absolute number of eosinophiles present in the blood, and in the presence of nucleated red cells before any extreme degree of anæmia had been reached.

What the normal evolution of these cells, known as large lymphocytes, is, seems to be largely a matter of opinion, but the bulk of evidence now tends towards the view that this cell is the mother cell of all the varieties of blood corpuscles, both erythrocytes and leucocytes. If this be the case, acute lymphatic leukæmia would appear to be a more fundamental disease of the marrow than even so-called myelogenous leukæmia, because the cells attacked would, on the above assumption, constitute the primary marrow cells.

Into the question of the ætiology of leukæmia it is at present fruitless to enter. A careful search was made in the blood films for the rods described by Auer, but without success. I may, perhaps, be pardoned, however, for calling attention to the fact that some years ago I found that extracts from enlarged glands obtained from a case of lymphatic leukæmia produced a striking fall in blood pressure when injected into the veins of rabbits—an effect which was not produced by similar extracts from normal lymph glands. The work was, however, incomplete, and apart from establishing this fact in a single case, was inconclusive.

The last point to which I shall revert is the association of tuberculosis and leukæmia. Sussman some years ago pointed out that tuberculosis and leukæmia are rarely associated. It is, therefore, of interest to note that in the present case there was evidence of old latent tuberculosis in the mesenteric glands, and that in the case recently reported by Smith and Earl active lymphatic tuberculosis was found.

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Numerous other papers were consulted, which it is unnecessary to enumerate, as many of the above give a complete bibliography.

ART. XVII.—*A Further Note on a Case of Spleno-medullary Leukæmia treated by X-rays.*^a By
 MAURICE R. J. HAYES, F.R.C.S.I.

THE patient returned to the Mater Misericordiæ Hospital on March 4, 1910.^b Since she went to the country, early

^a Read before the Section of Medicine of the Royal Academy of Medicine in Ireland on Friday, May 6, 1910.

^b The previous history of this case was given in a paper read before the Medical Section of the Royal Academy of Medicine on Nov. 26, 1909. [It will be found at page 321.]

in December, 1909, she had been quite well until the first week in February, when she noticed that her spleen again began to enlarge, and she had a recurrence of the pains in her legs, back, and the lower part of her abdomen, and she lost all relish for food. Menstruation had been regular and normal.

On examination she looked very anæmic, and she was breathless on the least exertion. Her spleen was hard and immovable; it extended for two inches to the right of the umbilicus and four inches below it, and it filled the entire left flank; it was also palpable beyond the middle line towards the right iliac fossa; it had not enlarged towards the liver in the epigastrium; her liver was not enlarged, nor were the lymphatic glands. She complained of occasional dull headaches; she had no visual disturbances.

On March 4th I gave her two X-ray exposures in the manner already described, one over the lower anterior, and the other over the upper anterior area of the spleen.

On March 9th the condition of the blood was as follows:—

Reds, 2,320,000. (Two megaloblasts seen in a count of 150 leucocytes.)

Hæmoglobin, 65 per cent.

Whites, 229,500. Reds to whites, 10 to 1.

Differential count—

	Per cent.
Polynuclears - -	57.0
Myelocytes (Neutrophiles) - -	18.5
Myelocytes (Eosinophiles) - -	3.0
Mast cells - -	12.0
Broken cells - -	4.0
Eosinophiles - -	2.0
Lymphocytes - -	1.9
Hyaline cells - -	1.6

On March 11th she was breathless, and her appetite was completely gone. She was very depressed, and she had severe pains on each side of her abdomen and over her sternum. I again irradiated the lowest part of her

spleen in her left flank as well as a circular area just above it. With a view to relieving the severe pain in her sternum I also irradiated it, and this pain permanently disappeared within a couple of days.

On March 14th I applied the rays to the upper and anterior part of the spleen in the epigastric region, and on the 21st I gave another exposure beneath the left costal arch.

Despite the treatment she got gradually worse, and she complained of severe pains in her thighs and ribs. She became very breathless, and was vomiting; her feet were œdematous, and her pulse was rapid (116 in the morning and 136 at night). Her temperature varied from 99° to 102° F. There were moist râles over both lungs, and she was worried with a distressing cough which kept her awake at night.

Although there was no improvement in her general condition, her spleen was undoubtedly reduced in size, and when last I saw her it extended only for a hand's breadth below the costal arch. She never had any hæmorrhages. She left hospital on March 30th of this year, when she died on her way to her home in the country.

ART. XVIII.—*The History of the Prevention of Small-pox.*^a

By T. PERCY C. KIRKPATRICK, M.D., F.R.C.P.I.;
Physician to Steevens' Hospital.

(Continued from page 354 and concluded.)

EDWARD JENNER, a younger son of the Rev. Stephen Jenner, was born on May 17, 1749, at Berkeley, in Gloucestershire, where his father was vicar. The Jenner family had for some time been settled in Gloucestershire, where the Rev. Stephen was possessed of some landed property. Edward received his early education at Dr. Washburn's Academy in Cirencester, and later became an apprentice to Mr. Daniel Ludlow,

^a Read before the Section of State Medicine in the Royal Academy of Medicine in Ireland on Friday, April 15, 1910.

a surgeon at Sodbury, near Bristol. Having finished his apprenticeship, Edward went to London to "walk the hospitals," and there became a pupil of the great John Hunter, then one of the surgeons of St. George's Hospital. Jenner appears to have been a favourite pupil of Hunter, and several letters which passed between them at different times have been preserved. In 1772 Jenner returned to Berkeley, where he started in general practice as a physician, and as such seems to have been both successful and popular. He spent his leisure time in carrying out experiments in natural history, collecting material for his old master, John Hunter, and in writing verses. In 1788 a paper by him on the natural history of the cuckoo was read before the Royal Society, and in the following year he was elected a Fellow of that body. He married in 1788 a Miss Catherine Kingscote. In 1792 Jenner's practice had increased so much that he decided to confine himself entirely to medicine, and with that view obtained the degree of Doctor of Physic from St. Andrew's University.

For many years it had been recognised that a certain form of pustular disease of the udders of cows, known as cow-pox, was communicable to the hands of those that milked them, and it was popularly believed by dairy farmers that any one who had once contracted this disease from the cow was afterwards protected from attacks of small-pox either by natural infection or by inoculation. Indeed, in 1774, a farmer named Benjamin Jesty, of Yetminster, had designedly inoculated his wife and two sons with some of the matter taken from sores on the udder of a cow the subject of cow-pox in order to protect them from an attack of small-pox. This inoculation produced rather severe constitutional symptoms that frightened Jesty at the time, but it was eminently successful, and the sons were found to be immune to inoculated small-pox thirty years afterwards. This tradition had been brought to the notice of Jenner while he was an apprentice at Sodbury, and had attracted him

very much. He mentioned the matter to Hunter, and expressed the opinion that use might be made of this method to prevent small-pox. Hunter is said to have given him the advice "don't think, but try." While in practice at Berkeley, Jenner set himself to investigate this tradition and to accumulate facts which would either prove or disprove the validity of the claim set up. The investigation was not an easy one, and though he sought help both from the country people and from his medical friends he found the testimony most conflicting. He recognised, however, that there was more than one disease popularly described as cow-pox, and that there were analogous diseases in both horses and swine. As early as November, 1789, he inoculated his eldest son with swine-pox, and subsequently the child was on three occasions inoculated with variolous matter, but did not develop small-pox. Jenner did not make any secret of his investigations, and we have letters from more than one medical man dealing with the subject. Thus in 1794 Dr. Haygarth, of Chester, wrote to Jenner, giving him advice as to the conduct of his investigations. In May of 1796 cow-pox broke out in one of the dairies near Berkeley, and one of the milkmaids, Sara Nemes, became infected in her hand. On May the 14th Jenner inoculated some of the matter from the vesicles on this girl's hand into the arm of a healthy boy, James Phipps, aged eight years. Typical vaccinia followed this inoculation, and subsequent inoculation with variolous matter on two occasions showed that the boy was not susceptible to that disease. From this time till the spring of 1798 Jenner's experiments were interrupted by the disappearance of cow-pox from the neighbourhood. On the 16th of March, 1798, Jenner vaccinated William Summers on the arm with lymph taken from an infected cow. Summers went through an ordinary course of vaccinia, and lymph from him was transferred to one William Peard. Peard developed rather severe constitutional symptoms as a result, but there was no sign of any general

eruption on the skin. From Pead several persons were vaccinated, including Jenner's own son, but in his case the vaccination was not successful. Several of these persons were subsequently inoculated with variolous pus, but not one of those so inoculated showed any sign of small-pox. These investigations Jenner now embodied in a paper which he wished to communicate to the Royal Society. This paper never formally came before the Society, but it was submitted unofficially to the President, and was returned to Jenner with the friendly admonition that as he had gained some reputation by his former work it would be unwise for him to present this lest it should injure his already established credit. Jenner was not satisfied with this decision, and in June of the same year he published in book form the paper entitled "An Inquiry into the Causes and Effects of the Variolæ Vaccinæ, a Disease discovered in some of the Western Counties of England, particularly Gloucestershire, and known by the name of Cow-pox." At the time of the publication of this book Jenner went to London, bringing with him a supply of vaccine lymph, and with some of this Mr. Cline, the celebrated surgeon of St. Thomas's Hospital, vaccinated a child that was under his care in the hospital for disease of the hip. The vaccination was successful, and subsequent inoculation of the child with small-pox virus did not result in the development of that disease. The subject now attracted considerable attention, many experiments were made by different observers, and various papers both for and against the practice were published.

The practice of vaccination was not accepted without considerable opposition, and shortly after the publication of Jenner's book Dr. George Pearson, of London, published a long paper on the history of cow-pox, in which he stated that the disease was often associated with a general pustular eruption. In April of 1799 Jenner published "Further Considerations on the Variolæ Vaccinæ or Cow-pox," in which he maintained his pre-

vious position as regards the disease, and stated that he had not met with any cases of general pustular eruption such as Dr. Pearson had mentioned. Jenner suggested that the difference might be due to the fact that his patients were treated in the country, while the others were treated in the town. In May of the same year Dr. Woodville published a paper containing a record of some five hundred cases of vaccination for which the vaccine matter was derived from the cows in a dairy-yard in Gray's Inn Lane. Woodville pointed out that in three or four of his five hundred patients there were very serious symptoms as the result of the vaccination, and one of the children actually died. He concluded "if it be admitted that, at an average, one in five hundred will die of the inoculated cow-pox, I confess I should not be disposed to introduce this disease into the Inoculation Hospital, because out of the last five thousand cases of variolous inoculation the number of deaths has not exceeded the proportion of one in six hundred." Pearson also recorded similar results, as did various other practitioners. Vaccination in most, if not in all, of these cases was performed with Woodville's lymph. Jenner replied to these strictures in a letter to the *Medical and Physical Journal*, and explained the cause of the trouble as due to the fact that variolous matter "had crept into the constitution with the vaccine." In July, 1800, Woodville replied with another pamphlet, in which he protested as to the purity of his vaccine, and stated that he had lately vaccinated two thousand persons without one alarming symptom. His former ill success he attributed to the vitiated atmosphere of the hospital. At this hospital patients affected with natural and inoculated small-pox were treated with the vaccinated persons. As a result of this controversy more care was taken in the collection of the lymph, and cases with a pustular eruption after vaccination became more scarce. Dr. Moseley, physician to Mr. Fox, was an active opponent of the practice; he published a paper in which he stated that "blindness, lame-

ness, and deformity had been the result of employing the vaccine in innumerable instances." He also suggested that this communication with beasts might "corrupt the mind and excite incongruous passions" in those vaccinated. William Rowley was also a noisy, if not weighty, opponent of vaccination. On one occasion he introduced at his lectures a boy whose face was much swollen and disfigured by an abscess, and thus described the case:—"On this cheek you plainly perceive a protuberance arising like a sprouting horn; another corresponding one will shortly spring up on the other side; for the boy is gradually losing human lineaments and his countenance is transmuting into the visage of a cow." Mr. John Birch, Surgeon Extraordinary to the Prince of Wales, was also a vigorous opponent, and after his death the following inscription was placed on his tombstone:—"But the practice of Cow-poxing, which first became general in his day, undaunted by the overwhelming influence of power and prejudice, and the voice of nations, he uniformly and until death perseveringly opposed."

That vaccination as performed in the early days of the last century, indiscriminately by all sorts of people and with all sorts of lymph, was sometimes fatal, or followed by serious septic conditions, we can well believe, and that too without any detriment to vaccination; but the occurrence of small-pox after successful vaccination was a real stumbling-block. Just as on the introduction of variolation small-pox was said never to follow it, so on the introduction of vaccination Jenner held that it was an absolute and permanent preventive. Cases, however, soon appeared in which small-pox did follow vaccination. At first such cases were explained by saying that the vaccination was unsatisfactory, or that a spurious cow-pox had been used. In the year 1811, however, the Hon. Robert Grosvenor, who had been vaccinated by Jenner himself ten years previously, was attacked with confluent small-pox. From this attack he recovered, but the case caused a great panic in London, and gave a new impetus

to variolation. Statistics of large numbers of cases were then collected, and they showed that though small-pox might follow vaccination, yet it did so less frequently than it followed variolation, and as a rule the disease was of a mild form. In the year 1813 a report was published by the Imperial Institute of France, in which it was stated that of 2,671,662 persons properly vaccinated in France only seven afterwards had taken small-pox. In the Foundling Hospital of London vaccination was introduced in 1801, and though the children were sometimes intentionally exposed to the infection of small-pox, yet in sixteen years only one slight case of that disease had occurred among them.

Early in May, 1800, vaccination was adopted in the army, and shortly afterwards in the navy, and in July of that year a declaration was signed by many of the chief medical men in London, expressing their confidence in the practice; this document had considerable influence in spreading vaccination. In 1802 Jenner petitioned Parliament for some remuneration as a reward for his discovery, and after an elaborate investigation by a committee £10,000 was voted him by Parliament. In 1806 the continued high rate of mortality from small-pox in London led Parliament to pass a resolution inviting the College of Physicians to consider the progress vaccination had made and the causes that retarded its general adoption. The College of Physicians, having consulted with the sister Colleges of Dublin and Edinburgh, presented a very full report to Parliament in July, 1807. On the receipt of this report the Chancellor of the Exchequer moved that a further grant of £10,000 be given to Jenner. An amendment proposing to increase the grant to £20,000 was eventually carried by a majority of thirteen.

Early in 1800 Dr. George Pearson established in London a Vaccine Pock Institution with the view of investigating the subject and of supplying the world with lymph. To this institution Pearson offered Jenner the position of extra corresponding physician, but as Jenner

had not been consulted in the formation of the institution he declined the position. Pearson, at the head of this institution, was looked on as in opposition to Jenner, and in 1803 it was decided to start a Vaccine Society on different principles. The patronage of the Royal Family was obtained, and the Royal Jennerian Society was started. Moore states that Pearson's Institution was "conducted on so mercenary a plan that it could be of little use." The Royal Jennerian Society, however, did not flourish. The first resident vaccinator appointed was a Quaker, Dr. Walker, who did not get on well with Jenner; religious differences soon occurred, and Dr. Walker was dismissed. A large number of Quaker followers of Dr. Walker left the Society with him and started another called the London Vaccine Institution. This caused a considerable falling off in the funds of the Royal Jennerian Society, and its downfall was completed by the appointment of a young Irish doctor, who appears to have had more aptitude for writing poetry than for vaccinating. A proposal was then made to Parliament to establish a National Vaccine Institute, and after a debate it was decided to do so. In 1808 the National Vaccine Establishment was started under the joint control of the Royal Colleges of Physicians and Surgeons with Jenner as director. In consequence, however, of some difference with the Board Jenner refused to act, and Dr. James Moore was appointed director in his place.

Vaccination was introduced into Dublin in March, 1800, and in 1804 the Cowpock Institution was established under the patronage of the Lord Lieutenant. This institution continues to work at the present time in Upper Sackville Street.

In India there was a good deal of trouble, as in that country the native inoculators made a considerable sum by variolous inoculation, and feared loss of income from the introduction of a practice which they said could not result in good, as no water from the Ganges was mixed with the lymph. The Government, however,

offered to pay the native inoculators if they would practise vaccination instead of variolation, and soon the difficulty vanished.

In Ceylon small-pox committed great ravages, and it was estimated that one-sixth part of the population was killed by the disease. In 1800 the English started small-pox hospitals in which inoculation was practised, yet it was estimated that one in four of those who caught the disease naturally died, and one in thirty of those inoculated. In 1802 vaccination was introduced, the small-pox hospitals were closed, inoculation was forbidden, and in two years it is stated that the disease had disappeared from three of the principal districts of the island.

In 1803 a Spanish physician, Dr. Francisco Xavier Balmis, obtained a commission to propagate vaccination in the American and Asiatic Dominions of Spain, and for this purpose freighted a ship to trade at the ports he touched at. He was singularly successful both in vaccination and trading, so that in two years he succeeded in putting a vaccine girdle round the world and making a considerable fortune.

In January, 1823, Jenner died at Berkeley, having lived long enough to see the practice of vaccination adopted by almost every civilised country of the world, and having received honours and distinctions from many of them.

During the first quarter of the nineteenth century the practice of vaccination spread to a very considerable degree not only in the British Isles but also on the Continents of Europe and America. Thus in 1809-10 we find the State of Massachusetts passing statutes providing for vaccination and for the money to pay for it. In 1801 vaccination was introduced into Sweden, and in 1816 it was made compulsory in that country. In 1825 it was estimated that of the children born 70 per cent. were vaccinated. In Denmark the practice of vaccination was introduced in 1801, and in 1810 it was made compulsory; from the records of that country it would

seem that the law there was very satisfactorily carried out. In England there are no figures to enable one to arrive at a certain knowledge of the number vaccinated at that time; it is, however, probable that the number was considerable, and many of those who were not vaccinated had already had small-pox. In England legislation on the subject of vaccination was much later than in some of the countries of the Continent. In 1802 and 1806 Parliament had made money grants to Jenner as already mentioned, and for some time annual grants were also made to the National Vaccine Establishment. In July, 1840, was passed "An Act to extend the Practice of Vaccination" (3 & 4 Vic., cap. 29). This Act applied to England and Wales, and by a special section was extended to Ireland. It empowered the guardians and overseers of every parish to contract with their medical officers to vaccinate such persons as might apply to them. Payments were to be made to these officers, such payments to depend on the number of persons successfully vaccinated for the first time. By this Act the practice of inoculation was made illegal. In June of the following year, 1841, an Act was passed providing that the expenses for carrying out the Act of the previous year should be charged on the poor rates, but persons vaccinated under the Act were not to be considered as in receipt of parochial relief, and were not to be deprived of any privilege in consequence. In August, 1853, at the instigation of the Epidemiological Society, "An Act to extend and make Compulsory the practice of Vaccination" was passed, but was made to apply only to England and Wales. By this Act children were to be vaccinated within three months of birth under a penalty of twenty shillings, and the payment to public vaccinators was regulated. In 1861 a further Act was passed to empower guardians to appoint persons to prosecute offenders under the former Act, and to make parents perpetually liable during the period of default. "The Public Health Act, 1858," was one of considerable im-

portance, as it vested in the Privy Council certain powers for the protection of the public health. The Privy Council was now given powers to issue regulations as to the qualifications of public vaccinators, and generally to control the practice. These powers the Privy Council continued to exercise till they were transferred to the Local Government Board by the "Local Government Board Act, 1871." In 1867 a consolidating statute was passed (30 & 31 Vic., cap. 184), which also introduced some new provisions. The payments to public vaccinators were increased, and the Privy Council was empowered to pay Public Vaccinators additional sums as a reward for successful work. Payment for revaccination was also enforced, and parents were compelled to bring their children to the vaccinator a week after the operation and to permit him to take lymph from them if he wished to do so. This Act was further amended by Acts passed in 1871 and in 1874, but the changes were chiefly of an administrative nature.

In Ireland the legislation has been somewhat different from what it was in England. The Acts of 1840 and 1841 had applied to Ireland as well as to England, but the compulsory Act of 1853 did not apply to Ireland. In 1863 an Act was passed making vaccination compulsory in Ireland (26 & 27 Vic., cap. 52). The children were to be vaccinated within six calendar months of birth, and for the operation a fee of one shilling was to be paid to the medical officer. The parents were to bring the children to the medical officer for inspection on the eighth day after the operation. In 1868 a short Act (31 & 32 Vic., cap. 87) was passed making inoculation with variolous matter a penal offence, and providing that persons vaccinated by the public vaccinator should not be considered as in receipt of poor law relief. In 1878 a section dealing with vaccination was introduced into the Public Health (Ireland) Act similar to section 31 of the English Act of 1867. In 1879 the last Act dealing with vaccination in Ireland was passed. This Act reduced the time

within which a child might be vaccinated from six to three months. It raised the fee for the operator from one to two shillings, and permitted the vaccinator to take, if he wished, lymph from the vaccinated child.

(The Vaccination Acts in force in Ireland are:—21 & 22 Vic., cap. 64; 26 & 27 Vic., cap. 52; 31 & 32 Vic., cap. 87; 42 & 43 Vic., cap. 70. Except sections 1, 2, 3 and 13 of 26 & 27 Vic., cap. 52, which were repealed by section 13 of 42 & 43 Vic., cap. 70.)

In Scotland the Vaccination law is practically comprised in one statute that was passed in 1863 (26 & 27 Vic., cap. 108). This Act made vaccination compulsory in Scotland. In that country it would seem that the majority of the people vaccinated are under the care of private practitioners, and the public vaccinators deal only with paupers and the children of paupers, except in the case of defaulters, who must either be vaccinated by the public vaccinator or submit to the penalties of the law. Vaccination in Scotland, too, differs from that in the other parts of the British Isles in that the public vaccinator vaccinates chiefly in the person's own house and not at a dispensary.

In Germany vaccination was early introduced, but for some time the practice was purely voluntary. In 1834 vaccination was made compulsory for every recruit joining the Prussian army, whether he had been vaccinated before or not. In 1874 compulsion was extended to the civil population. According to this law of April, 1874, every child must be vaccinated before the end of the calendar year following the year of birth, and all school children must be revaccinated in their twelfth year. Obedience to this law is enforced by fine or imprisonment. In Austria there is no compulsory vaccination, though since 1891 vaccination has been "promoted" by the sanitary authorities. Vaccination, though very largely carried out, is not compulsory in France. In Paris when information is received of the occurrence of small-pox in any district vaccinators are sent to the district in question,

and they make domiciliary visits for the purpose of offering vaccination to those persons who are unable or unwilling to attend the public vaccination stations. In such cases the vaccination is performed directly from the calf to the arm of the person, and for that purpose the calf is sent to the house from the Institut Vaccinal in a specially constructed van.

The experience gained in the past hundred years of vaccination in different countries has not been unproductive, in both our knowledge and practice of the method. When vaccination was introduced by Jenner it was a more or less isolated method of preventive treatment—a substitute for variolous inoculation. Jenner believed that vaccinia was variola so modified by passing through the cow that though it preserved its preventive properties, it had lost its infective properties, and as it had been recognised that one attack of small-pox gave a practical immunity from future attacks of the disease, so he claimed for vaccinia that it gave practically a perpetual immunity also. The cases in which this immunity failed, when not attributable to inefficient vaccination, he looked on as similar to those exceptional cases in which more than one attack of small-pox occurred. Experience has shown that this position cannot altogether be maintained; primary vaccination confers a certain amount of immunity against small-pox, which immunity, however, lessens as time goes on, and it would seem that the immunity resulting from primary vaccination in infancy is neither so great or so lasting as that resulting from adult vaccination. This decrease in immunity can, however, be renewed by re-vaccination, which should always be done in case of vaccination in infancy, and is advisable even when the primary vaccination took place during adult life. It has also been recognised that the immunity acquired as the result of vaccination and revaccination varies in different individuals. In some it is greater, in others it is less. We are not yet in a position to state the factors on which

this difference depends, though it seems probable that it bears some causal relation with the number and extent of the marks resulting from the vaccination. In the time of Jenner this immunity resulting from vaccination was a more or less isolated phenomenon, but recent investigations have given us many parallel examples. In many diseases, the result of infection by micro-organisms, it has been shown that infection by the parasite has resulted in the formation in the body fluids of substances which are antagonistic to the growth of the micro-organism, and not only can the presence of these substances be demonstrated, but their efficiency can also, to a certain extent, be measured. This knowledge has been made use of to a large extent in medical treatment, and the use of these immunising substances, artificially produced, has been one of the triumphs of modern medicine. Though there is good ground to believe that small-pox is a disease due to the infection of the body by a parasitic micro-organism, and it is probable that this organism has been identified, demonstrative proof of this is not yet forthcoming, and till this proof has been obtained it is not possible to demonstrate the absolute identity of variola and vaccinia, but short of demonstrative proof there seems to be little room for doubt in the matter.

In the practical application of vaccination the advance has been even greater than the advance in our theoretical knowledge. In the early days of vaccination the accidental inoculation of extraneous micro-organisms with the vaccine matter was often the cause of serious results to the vaccinated person. Indeed, the wonder is that this was not always the case; but since aseptic methods have been introduced this accident is both rare and preventable, just as is infection of a wound after a surgical operation. Formerly arm to arm vaccination, or the use of human lymph, was the general rule, and there was always the possibility of the lymph having been taken from a diseased person and so of inoculating the vaccinated person with some other disease as well as

with the vaccinia. Now, calf lymph is almost universally employed, and the animal from which the lymph is taken is submitted to a very thorough investigation to show that it is not the subject of any disease before the lymph is inoculated into human beings. Lymph, however, collected under the most favourable conditions is always liable to contamination with extraneous organisms, and its subsequent sterilisation, without destroying its efficacy, was a matter of great difficulty. During the past twenty years this difficulty has been overcome, and now it is possible to remove from the lymph the extraneous organisms without interfering with its activity. This has been effected by the use of glycerine. The fresh lymph is thoroughly mixed with glycerine in a special machine; it is then sealed up in sterile tubes and stored in a dark place for from four to six weeks, after which time it is found to be free from extraneous organisms. At first glycerine was used merely to dilute the lymph and to increase its bulk, for as far back as 1868 Müller had shown that this did not impair the efficacy of the vaccine. The fact that the addition of glycerine was of actual benefit was later pointed out by different workers. The Italians claim that Leoni made this discovery in 1888, his work being published in 1890. The Germans claim priority for Schulz, of Berlin, and state that the method of glycerinizing lymph for this purpose has been in use in Germany since 1888. In England the work of Copeman has been of great value. His communication was made to the International Congress of Hygiene in 1891, when he fully demonstrated the value of this process. St. Yves Ménard and Chambon, of Paris, have also done good work in this connection. Much earlier than any of these workers Koch, in 1883, had recognised that extraneous micro-organisms gradually disappeared from lymph to which glycerine had been added, but he does not seem to have recognised the importance of the observations from the vaccinator's point of view. The lymph prepared in this way is carefully examined by

bacteriologists before it is issued to the public, and its issue is not permitted unless its purity is beyond suspicion. In these countries every medical student before he becomes a registered practitioner is compelled to take out a special course in vaccination. The rules in connection with this course seem to many to be unduly stringent, but they ensure that every medical practitioner has been instructed in what is believed to be the best and safest way of performing vaccination.

It would not be right to close this review of the history of the prevention of small-pox without paying some tribute to the benefits that have been derived from modern methods of sanitation. The good work that has been done in the past fifty years has borne fruit in the prevention of small-pox epidemics as in the case of the other zymotic diseases. Dealing with small-pox, however, by such methods is of peculiar difficulty. The human race, even when living under the most satisfactory sanitary conditions, appears to be particularly susceptible to the disease, and experience has shown us that very few unprotected persons escape the disease entirely, if they are exposed to infection. Further, the infection seems to be readily carried by the air, and the striking distance seems to be greater than with most other diseases. These difficulties have led to the adoption in many places of special regulations for the prevention of small-pox. In Germany such special regulations do not exist, and small-pox is dealt with under regulations quite similar to those in force for the prevention of other diseases, reliance being placed on the protection afforded to the community by vaccination and revaccination. In England the matter is different, and the following regulations have been issued by the Local Government Board.

"Hospitals for small-pox.—In view of the frequently demonstrated liability of small-pox hospitals to disseminate that disease to neighbouring communities, and in order to lessen the risk of such occurrence, the Board require the following conditions to be complied with in

the case of small-pox hospitals provided by means of loans sanctioned by them:—1st. The site must not have within a quarter of a mile of it either a hospital, whether for infectious diseases or not, or a workhouse, asylum, or any similar establishment, or a population of as many as 200 persons. 2nd. The site must not have within half a mile of it a population of as many as 600 persons, whether in one or more institutions, or in dwelling-houses. 3rd. Even where the above conditions are fulfilled, a hospital must not be used at one and the same time for the reception of cases of small-pox and of any other class of disease.” In dealing with individual cases of small-pox most health authorities insist on the immediate removal of the patient to an isolation hospital, and at the same time on the isolation of all persons who have recently been in contact with the patient. Sometimes this isolation of contacts is effected by their removal to special places, but in other cases it is considered better to isolate them in their own homes. Whichever course is adopted it is attended with considerable expense. That this expenditure is of benefit, however, is evident from the results which were obtained at Leicester during the epidemic of 1892-1893, and in the last epidemic in Dublin. The efficacy of sanitary measures in preventing the spread of small-pox is also well shown by the case of Australia. Up to 1838 Australia had enjoyed an absolute immunity from small-pox; towards the end of that year the disease appeared in Sydney, but lasted only a short time. It then remained absent from the Continent till 1868, when it was introduced into Melbourne, but was quickly stamped out. In New South Wales, by an Act passed in 1882, notification of small-pox was made compulsory on medical men and householders under heavy penalties. At Sydney notification of small-pox is followed by the compulsory removal of the patient, and all persons who have been in the house with the patient, to the quarantine station at North Head. This station is 670 acres in extent, and situated on the peninsula at the

mouth of Sydney Harbour. It is seven miles from the Health Office, with which there is telephonic and telegraphic communication. The persons are conveyed to the station by a steamboat, comfortably fitted expressly for the purpose, and no difficulty has been experienced in effecting the removal. The persons who have been in the house with the patient are detained twenty-one days in quarantine from the date of the last possible contagion. Should a case of small-pox arise among them, those who had been in contact with such infected person would be detained for a further period of twenty-one days, and so on. To facilitate this the exposed persons are distributed in separate groups within the station. They are allowed to receive letters or parcels, and a telegraph operator is employed whose special business is to work the telegraph at their request. Reasonable compensation is given by the Government for loss, and there are heavy penalties whereby the quarantine is secured. Dr. MacLaurin, the President of the New South Wales Board of Health, said that the station is "a pleasant place to stay in, and everything is done that can be done to make the people comfortable; they have nothing whatever to do, and are free from all care, and they can spend the day pleasantly enough; but they do not like it." No one, however, raises any objection to the Sydney system, and "the people are all very sensible about it." In New South Wales there is very little vaccination, and there is no compulsory vaccination law. In all Australian towns a similar system is carried out just as strictly, and on February 5th, 1890, there was not a case of small-pox in all Australia.

There seems to be a tendency in the preventive treatment of small-pox to return to the ancient methods of Thibet of strict isolation, carried out perhaps with more humanity and with more regard for the interests of the individual than was the case in that country, but still on a similar principle. Where these methods are thoroughly carried out they will probably be found quite

efficient, and be beneficial not only in the prevention of small-pox but also in the promotion of the general health of the community. The experience, however, of sanitary workers in these countries does not justify the assumption that they are applicable as yet in their completeness to the conditions of our country. In spite of the great advances in sanitation during the last fifty years it has not been found possible to control the incidence of other zymotic diseases to a similar extent as we have been able to control that of small-pox, though many of these appear to be more amenable to control by sanitary measures than is small-pox. The difference, we believe, is due to the preventive action of vaccination and revaccination. We must consequently add our tribute to that of the nations of the world to the illustrious Jenner for his great discovery—a discovery the benefit of which has been and is enormous. Whether Jenner's method will continue to be necessary or not in the future for the prevention of small-pox will depend on whether the great mass of the people will or will not be prepared to submit to the restrictions on their so-called liberty which are entailed by a rigid observance of sanitary laws.

ART. XIX.—*Radical Operation for the Cure of Umbilical Hernia.* By J. SINGLETON DARLING, M.D., M.Ch.,
Dubl. (Lurgan).

A LITTLE more than two years ago I devised an operation for treatment of this form of hernia in a corpulent man, which in November, 1908, I brought before the Ulster Branch of the British Medical Association in Belfast. Since then I have had further opportunities of testing it, and am satisfied with the results. In only one of my cases has the hernia been reducible. I proceed as follows:—Include the thinned skin stretched over the hernia in an oval incision carried down to the neck of the tumour; the fat being cleared off this, cautiously divide the aponeurotic covering all round without opening the

peritoneum, detach this membrane from the margin of the ring and the back surface of the abdominal wall for a short distance, then open the sac, separate the adhesions usually found, reduce the intestine if present, tie off and remove the omentum, tie the neck of the sac, or close it with purse-string suture. Now thrust a scalpel with the flat of its blade parallel with the peritoneum into the tissues forming the ring, commencing rather below its middle, and equidistant from the front and back surfaces, split the rectus to a depth of one and a quarter or one and a half inches right round the upper two-thirds of the ring. Retract the skin downwards, pass a needle through the rectus one and a half inches below the ring, and to one side of the middle line, bringing the point up so as to be superficial to the detached peritoneum, pick up on the suture the posterior lip of the split upper margin of the ring, bringing it back from behind forwards to a point on the other side of the middle line opposite the place of entry. Clip forceps on ends and leave loose. The assistant then retracts the skin upwards, and a similar suture is passed from the front as high up as can be conveniently reached into the apex of the cleft; a wide piece of the lower margin of the ring is caught, and the needle is now passed from the apex of the cleft through the anterior wall to one side of the point of entry. This suture is now tied, the lower margin of the ring being drawn up to the apex of the cleft. The thread first introduced is now tightened, drawing down the posterior flap in close apposition with the covering of the back of the rectus. The free anterior lip of the upper margin is now drawn down and sutured to the anterior covering of the rectus, and the skin wound is closed.

I use iodised catgut throughout, and the utmost care is taken to preserve asepsis. It will be seen that this operation differs from Mayo's in that the lower portion of the ring is deeply embraced in the split rectus muscle above, and a double abdominal wall is opposed to the in-

ternal pressure, which in patients operated on after other methods soon reopens the closed aperture. The increasing corpulency of the patient on whom I first performed the operation subjected it to a severe test, but the abdominal wall is quite firm after more than two years. If other surgeons try it, it will not be long until sufficient data are obtained to enable us to judge of the permanence of the results.

In one case, where the point of exit was in the lower part of the umbilicus, and the skin could not be easily retracted upwards, I introduced the suture from above into the cleft through a button-hole opening in the skin, which was closed as soon as the thread was tightened. In another patient repeated inflammatory attacks had so matted the peritoneal and aponeurotic coverings together, and the contained omentum was so firmly adherent, that I found it better to remove it and the coverings *en masse*, and it was difficult to get the peritoneum together to close the opening. Such difficulties must be met with, no matter what method is chosen.

“ V. E. M.”

By these mystic letters we are to understand the “ Voyages d'Études Médicales aux Stations Hydrominérales et Climatiques de France ” which were organised in 1899 by Dr. Carron de la Carrière. These health-resorts have been divided into five groups, according to their geographical situation, and every year in rotation, in the first fortnight of September, an excursion is made to all the health resorts situated in the same district. The “ V. E. M.” (that is, “ Voyage d'Études Médicales ”) of 1910 will take place from the 1st to the 15th of September, under the scientific direction of Professor Landouzy, Dean of the Faculty of Medicine of Paris. It will include the health-resorts of Savoy and Dauphiné. For full details application should be made to Dr. Carron de la Carrière, President of the Society of Medical Hydrology of Paris, 2 Rue Lincoln, Paris.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A System of Operative Surgery. . By Various Authors. Oxford Medical Publications. Edited by F. F. BURCHARD, M.S. (Lond.), F.R.C.S. (Eng.); Teacher of Operative Surgery in King's College, London; Surgeon to King's College Hospital, Senior Surgeon to the Children's Hospital, Paddington Green. In four volumes. London: Henry Frowde; Hodder & Stoughton, Oxford University Press.

IN the preface we are informed that on account of the great advances that have been made in the details of operative technique during the past fifteen years it was found necessary to secure the co-operation of a number of prominent British surgeons in the production of the work before us, so that the improvements which have been developed simultaneously throughout the entire vast field of modern surgery might be brought thoroughly up to date, and that the work should reflect faithfully the present position of operative surgery in Britain. Naturally, this method of collaboration leads to overlapping; but such a drawback is more than compensated for by the general thoroughness and excellence of the various sections. The contributors to the first volume, which consists of over 750 pages, are C. B. Lockwood, who writes on the "Principles and Technique of Wound Treatment"; Captain J. W. H. Houghton R.A.M.C., who contributes the section on "The Methods of Local Anæsthesia"; the Editor, who writes on "Amputations," "Operations upon Arteries, Veins, Lymphatics, Nerves, Muscles, Tendons, Tendon Sheaths and Bursæ," and upon "Operations for Non-Tuberculous Affections of Bones and Joints"; and T. P. Legg, who writes on "Plastic Surgery."

C. B. Lockwood's article embodies, as one would naturally expect, a large amount of his own well-known work on the "Principles and Technic of Wound Treatment," and leaves nothing to be desired on the subject. It consists of five short chapters.

Captain Houghton contributes two chapters on "Regional and Spinal Anæsthesia."

The subsequent 600 pages comprise the Editor's contribution to this volume, and are characterised by that thoroughness and clearness of exposition for which, as a teacher, he is so well known. The section on Plastic Surgery is complete, and eminently practical throughout. The illustrations of this volume are beautifully executed and generally abundant, but a work on operative surgery must be profusely illustrated if its educational value is to be brought to the highest pitch of excellence. In this respect we think greater educational value might have been given to the work by the elimination of a few illustrations from some sections and the inclusion of a few in others. For example, there is not a single illustration at all in connection with the operations for removal of the semilunar cartilages, drainage of the knee-joint, or suture of the crucial ligaments; whereas Barker's method of treating fracture of the patella is illustrated by the well-known illustration, though, in our opinion, the operation is a useless one for the accomplishment of the purpose for which it was introduced.

There are nine contributors to the second volume, which comprises over 700 pages. The contributors are—Harold J. Stiles, who writes on "Operations for Tuberculous Affections of Bones and Joints"; Edmund Owen, who writes on "Operations for Hare-lip and Cleft-palate"; G. Lenthal Cheatle, who contributes the section on "Operations for Cancer of the Lips and Face"; C. H. Fagge, who writes on "Operations upon the Jaw and upon the Oesophagus"; H. T. Butlin writes on "Operations upon the Tongue, Tonsils, and Pharynx"; B. G. A. Moynihan, on "Operations upon the Stomach"; G. H. Maxims, "Operations upon the In-

testines"; Arthur E. Barker, "Operations for Hernia"; and F. Swinford Edwards, "Operations upon the Rectum and Anus."

The name of Harold J. Stiles is sufficient guarantee for the excellence with which the section entrusted to him is treated. It is a splendidly practical section, and well worthy of the author's reputation. It is abundantly illustrated, and leaves nothing to be desired. The subsequent sections by Messrs. Owen, Lenthal Cheatle, Fagge, and Butlin are clear, practical, and up-to-date, and well illustrated. To state that the following section is contributed to by Messrs. Moynihan, Maxims, Barker, and Swinford Edwards is sufficient to indicate that the reader will be well repaid for his trouble. To the reader it is obvious that the authors have had not only vast experience in their respective subjects, but that they have left their mark upon their work and added much to our knowledge of the subjects of which they have written. The chapters devoted to Rectal Surgery are nearly equal in merit to the others in this section, while it is somewhat scantily illustrated.

The contributors to Volume III., which consists of over 760 pages, are twelve in number.

Harold J. Stiles contributes the section on "Operations for Tuberculous Disease of the Lymphatic Glands" and "Operations upon the Breast"; B. G. A. Moynihan and Harold Upcott contribute the section on the "Operations upon the Spleen"; James Berry writes upon "Operations upon the Thyroid Gland"; A. W. Mayo Robson, "Operations upon the Bile Passages and the Pancreas"; L. Bathe Rawling, "Operations upon the Skull and Brain"; W. Thorburn, "Operations upon the Spinal Cord and Canal"; David Newman, "Operations upon the Kidneys and Ureters"; J. W. Thompson Walker, "Operations upon the Bladder and Urethra"; P. J. Fryer, "Operations for Vesical Calculus" and "Operations upon the Prostate"; the Editor, "Operations upon the Male Genital Organs"; and Rickman J. Godlee, "Operations upon the Thoracic Wall and its Contents."

It will be seen that the same plan of asking those who had more or less specialised in certain directions to contribute to those sections has been followed in this volume, and, it must be admitted at once, with great advantage. The volume is an exceedingly interesting and important one, and well maintains the standard of excellence of its predecessors. In the section on "Operations upon the Prostate" the reader would scarcely believe that complications, save those of shock and secondary hæmorrhage, were ever met with, and yet we know complications are not at all infrequent. The author informs us that his mortality has steadily decreased from 10 per cent. in his first 100 cases to 4 per cent. in the last 100. The illustrations are abundant, and beautifully reproduced.

The fourth volume, which consists of over 680 pages, is contributed to by the following six distinguished specialists:—

John Bland Sutton, who writes on "Abdominal Gynæcological Operations"; John Phillips, who contributes the section on "Vaginal Gynæcological Operations"; M. S. Mayou writes on "Ophthalmic Operations"; Hunter F. Tod writes on "Operations upon the Ear"; W. Douglas Harmer contributes the section on "Operations upon the Larynx and Trachea"; and the volume is completed by the contribution of St. Clair Thomson on "Operations upon the Nose and its Accessory Cavities."

The volume is, therefore, entirely devoted to specialisation with which the general surgeon must be more or less familiar. We would have preferred to have seen the first section on "Abdominal Gynæcological Operations" more extensively illustrated than it is; but the text is clear and the author's vigorous style is well to the fore. The entire work is, in our opinion, by far the most authoritative work on Operative Surgery in the English language. The Editor and his collaborators are to be deservedly congratulated, while too much praise cannot be given to the publishers for the beauty of the illustrations as well, indeed, as for their abundance, while

the work is generally got up in a most attractive style. The appearance of the volume is handsome, while the typography is excellent.

Surgery: Its Principles and Practice. By Various Authors. Edited by WILLIAM WILLIAMS KEEN, M.D., LL.D., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; and JOHN CHALMERS DA COSTA, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume V., with 550 Illustrations; 45 of them in colours. Philadelphia and London: W. B. Saunders Co. 1909. Pp. 1274.

THE volume which lies before us is the fifth and concluding volume of a truly monumental work on surgery. It well maintains the high standard of excellence attained by its predecessors. It opens with a chapter by Rudolph Matas on "The Surgery of the Vascular System." The author's name is sufficient guarantee for the fulness and excellence of this section, which is really a complete monograph in itself. It is one of the most complete and valuable sections in the whole work, and is obviously the work of one who is familiar alike with the practice and literature of his subject. The next section is devoted to Gynæcology, and forms a nice little treatise on the subject. Several authors contribute their quota to this portion of the work. It contains everything that the general surgeon requires in connection with the subject of gynæcology.

Then follow chapters on Surgical Technic, Ligation of Arteries in their Continuity, Operations on Bones and Joints, Amputations, Plastic or Reconstructive Surgery, and the Surgery of Accidents. Each of these sections is written by a well-known authority. Their exposition is lucid and the illustrations enhance the value of the text. In the surgery of accidents we are told that malingering among the working classes is rare, but that

it is different with the better classes. In this respect our experience is just the reverse, and more especially since the introduction of the Workmen's Liability Act into this country. C. H. Mayo writes on the "Surgery of the Parathyroid Bodies." His name stands guarantee for the thoroughness and completeness of this chapter, but, for all that, our knowledge is but little advanced on the subject.

Dr. Frazier contributes the chapter on "The Intracranial Surgery of the Trigeminal and Auditory Nerves." Then follow chapters on "Anæsthesia and Anæsthetics." Local and subarachnoid anæsthesia are fully described.

Of the concluding sections that on the "Laboratory as an Aid to Surgical Diagnosis and Technic" is the most interesting.

We have had nothing but praise to offer in connection with our reviews of the various volumes of this great work on Surgery, and we offer our heartiest congratulations to the distinguished editors and the various contributors, as well as to the artists and publishers, for the success attendant upon their labours.

Contributions to Abdominal Surgery. By the late HAROLD LESLIE BARNARD, M.S., F.R.C.S.; Surgeon with charge of Out-patients to the London Hospital. Edited by JAMES SHERRIN, F.R.C.S.; Surgeon with charge of Out-patients to the London Hospital; Surgeon to the Poplar Hospital for Accidents, &c., &c. London: Edward Arnold. 1910. Pp. xix + 391.

THIS book is one of which every surgeon will desire to be the possessor. It consists of the collected papers of that most brilliant surgeon the late Mr. H. L. Barnard who was cut off in the spring-time of his work.

Most of the papers have appeared from time to time during the past decade, but much new matter has been incorporated, especially in connection with intestinal obstruction, to which the major portion of the book is devoted, and upon which the late Mr. Barnard had in-

tended bringing out a large work. The 255 pages devoted to intestinal obstruction in the present volume form an almost complete monograph on that most important and interesting subject. To the reader it is obvious that its author was a surgeon of vast experience and great observation and resource. Another eminently practical chapter is one on "The Simulation of Peritonitis by Pleuropneumonic Disease." This is a chapter the careful study of which we would strongly recommend to every surgeon. The book concludes with the most complete account of hypophrenic abscess that has hitherto been written. Apart from the melancholy and sentimental interest attached to the book we can strongly recommend its careful study to every surgeon, who will be well repaid for his time and trouble.

Lurgan Urban Sanitary District. Report of the Medical Superintendent Officer of Health, SAMUEL AGNEW, M.A., M.D., for the Year 1909. Lurgan : Printed at the Office of the *Lurgan Mail*. 1910. Pp. 20.

DR. AGNEW'S annual Health Reports are always interesting and instructive. The Report for 1909 is no exception, and we wish that other Irish towns of moderate size would follow the example set by the thriving Ulster town which has the good fortune to possess so able a Medical Superintendent Officer of Health.

Lurgan was among the first sanitary authorities to adopt Part I. of the Tuberculosis Prevention (Ireland) Act, which came into force on July 1, 1909. Dr. Agnew's views on the Act are well worth quoting. He writes :—

" I regret to say that the limitations imposed by the Act, and the subsequent Orders of the Local Government Board, have rendered this portion of the Act practically useless. The number of cases of Phthisis which come under the definition so as to be notifiable are so few in proportion to the total number, and, in 19 out of every 20, are those of which the dispensary doctor, being the Medical Officer of Health, is already cognisant of, that little or no value can be placed on the utility of this part of the Act.

All cases of open tuberculosis of the lungs should be notifiable if any good results are to accrue from the possession of the information by the Sanitary Authority."

This is a weighty indictment, and one, unfortunately, which is only too easy of proof.

Again :—

"In connection with the establishment of Tuberculosis Dispensaries, also, the Act is very defective and impotent. Such dispensaries must be in charge of County Committees, and the expenses involved in their upkeep form a county charge; so that, if it was contemplated to start a tuberculosis dispensary in Lurgan or Portadown it would be perfectly foolish to expect that the County Council would impose such an imposition on the county funds."

In these quotations we have an insight into the impractical character of the Tuberculosis Act—a piece of hasty legislation, in connection with which the representations of the Medical Profession were studiously and systematically ignored.

Under the heading "Zymotic Disease," Dr. Agnew gives a very valuable account of an outbreak of scarlatina which occurred in April and May, 1909. There were 64 cases, of which 53 were notified in April and 11 in May. The fatal cases numbered 4. On April 15 Dr. Agnew detected a boy, aged ten, in the desquamation stage of the disease, carrying a bundle of handkerchiefs to one of the local factories. The epidemic lasted six weeks, but was practically under control at the end of the second week. The weekly numbers of cases were—23, 21, 9, 4, 4, and 3. Dr. Agnew reiterates his oft-expressed opinion that a town of the size of Lurgan should have a properly equipped isolation hospital under the charge of the Sanitary Authority.

By-the-way, nowhere in the Report is the population of Lurgan mentioned. According to the Census of 1901, it is 11,782; but at this distant date that figure must be taken with some reserve.

We congratulate Dr. Agnew on the friendly terms which apparently exist between himself and his Sanitary Authority. During the year that Authority acquired on very reasonable

terms a fine Park for the use of the inhabitants. In it Dr. Agnew suggests that two or three neat revolving shelters should be erected, in which delicate patients might spend their time in inclement weather.

*SOME RECENT AMERICAN WORKS ON OBSTETRICS
AND GYNÆCOLOGY.*

1. *Medical Gynæcology.* By SAMUEL WYLLIS BANDLER, M.D., Adjunct Professor of Diseases of Women, New York Post-graduate Medical School and Hospital; Fellow of the American Association of Obstetricians and Gynæcologists. With original Illustrations. Second Revised Edition. Philadelphia and London: W. B. Saunders & Co. 1909. Pp. 698.
2. *A Text-book of Obstetrics.* By BARTON COOKE HIRST, M.D., Professor of Obstetrics in the University of Pennsylvania; Gynæcologist to the Howard, the Orthopædic, and the Philadelphia Hospitals, &c. With 847 Illustrations, 43 of them in Colours. Sixth Edition. Revised and Enlarged. Philadelphia and London: W. B. Saunders & Co. 1909. Pp. 999.
3. *A Text-book on the Practice of Gynæcology for Practitioners and Students.* By WILLIAM EASTERLY ASHTON, M.D., LL.D.; Fellow of the American Gynæcological Society; Professor of Gynæcology in the Medico-Chirurgical College, and Gynæcologist to the Medico-Chirurgical Hospital, Philadelphia, &c., &c. With 1,058 New Line Drawings. Fourth Edition. Revised and Enlarged. Philadelphia and London: Saunders & Co. 1909. Pp. 1099.

1. So short a time—little more than a year—has elapsed since the first appearance of Dr. Bandler's book that it scarcely calls for more than a passing notice and the offering of our congratulations to the author on its success. The book is intended to deal with the non-operative side of gynæcology, and represents with elaborations a grouping and re-arrangement of the author's clinical lectures. "Operative

measures have been viewed as the last resource in those numerous conditions where medical means can accomplish so much."

The new edition presents few changes from the old. The chapters on electricity and hydrotherapy have been enlarged, and several pages have been added on "Head Zones" as an aid to diagnosis. The book will well repay study, and in many ways throws a new light on certain gynæcological conditions.

2. PROFESSOR HIRST'S "Obstetrics" is an old favourite with medical men not only in his own country but also in the British Isles, and its sixth edition will meet with a ready welcome. In one way it is a new departure in similar works, since the author has included in it not only the discussion of obstetrics proper but also of all "operations for the complications and consequences of the child-bearing process at all periods—that is to say, all gynæcologic operations." Accordingly, one finds descriptions of pan-hysterectomy for chorion-epithelioma, salpingo-oöphorectomy for ectopic pregnancy and infections of the puerperium, plastic operations for injuries of the genital canal, and even operations for retro-displacements of the uterus. We doubt the advisableness of such a course, as it is impossible to give a sufficiently detailed description in the space available, and, as a matter of fact, Professor Hirst has devoted only some sixty pages to what from its scope might well constitute a separate work on operative gynæcology.

A number of new illustrations have been added, and the entire work has been carefully revised.

3. ALTHOUGH a comparatively short time has elapsed since we received the first edition of Professor Ashton's work on gynæcology for review, we find that it is the fourth edition which now lies before us. Dr. Ashton's intentions from the first were to lay before the general practitioner and the student a work which dealt fully with the medical, as well as the surgical, aspect of gynæcology, and to discuss subjects on the basis of his own experience. He also aimed at the

fullest possible illustration. In the present edition these aims have been perpetuated, and the majority of the changes have been made with the object of presenting from a conservative basis the recognised advances in gynæcology.

The book is an excellent example of completeness and exactness, and the amount of labour and time which has been devoted to it is obviously enormous. The system of illustrating adopted is, perhaps, not very artistic, but the drawings are eminently useful and practical. We have no hesitation in recommending Professor Ashton's as a valuable work of reference, not only for the general practitioner, but also for specialists.

Alcohol and Alpinism. By Dr. L. SCHNYDER, Berne. Translated by E. G. RICHARDS. Edinburgh and London: Wm. Green & Sons. 1910.

THE author of this little work was anxious to learn the personal opinion of active Alpine climbers concerning the value of alcohol in mountain climbing, and in consequence addressed a series of questions to twelve hundred members of Alpine Clubs. Nearly six hundred replies were returned, and this book mainly consists of an analysis of these replies, with comments and deductions by the writer. We are pleased to find that most of the replies are in accord with our own fixed opinions. Alcohol, save as a reserve in case of accident, should in our opinion be entirely discarded by those who desire to make high and arduous ascents; and we feel that it is important that young climbers should be aware of its injurious effects. No doubt most Alpine guides drink wine, and, indeed, as we think Whympers pointed out, the rate of evaporation from wine bottles is greatly increased at high altitudes, when there are many guides in the party; but in this, as in many other things, the amateur should not emulate the professional. The ordinary red wine usually consumed is provocative of headache, more especially if the day is warm, and, in many, digestive disorders also follow its use. As a stimulant its effects are transitory, and instead of relieving, it induces thirst. To the properly trained man—and it is only

those who are in proper training who should undertake difficult climbs—stimulants are unnecessary. On the other hand, badly trained men will dearly pay for temporary stimulation by severe and increasing depression. The best beverage, we believe, on the mountains is cold tea, which may be sweetened or not according to taste; but it is for its thirst-quenching properties rather than for its stimulant effects that we recommend it. Alcohol should not even be taken the night before a climb, save in the smallest quantities with a meal—a fact which one of the climbers who returned a reply to Dr. Schnyder's questions seems to have learned in a practical manner, for he speaks feelingly of the discomfort he experienced on a climb one day following a prolonged stay at a café overnight.

We wish that this inquiry had been extended so as to discover the opinion of climbers concerning the use of tobacco. Personally we have the same opinion about it as we have expressed about alcohol. If you wish to enjoy your climb, to feel vigorous and fit, and to negotiate dangerous places with pleasure, avoid the one and abhor the other.

A Manual of Sanitary Law. By ROBERT P. M'DONNELL, D.P.H., F.R.C.S.; Fellow of "The Society of Medical Officers of Health"; late M. O. H. Bray No. 2 Dispensary District, Rathdown Union. Dublin: Edward Ponsonby, 116 Grafton Street. 1910. Pp. xiv + 89.

THE object of this little book is to assist candidates who are reading for the Public Health qualifications. The first few pages are devoted to definitions culled from the various Public Health Acts. In the body of the work the author states shortly the purpose and the principal measures of the statutes that affect the duties of Medical Officers of Health, Executive Sanitary Officers, and others who have to deal with the legislative aspect of Hygiene and Public Health. Amongst the statutes so contained are the Public Health Act, 1875, and the corresponding Irish Act of 1878, the Amendment Act of 1890, the Infectious Disease (Notification) Act, 1889, the Infectious Disease (Prevention) Act, 1890, and the

Sale of Food and Drugs Acts, 1875, 1879, and 1899. The model by-laws recommended by the Local Government Board are set out, and the respective duties of Medical Officers of Health and of Sanitary Inspectors (Inspectors of Nuisances) are contained within the compass of this work. In order that the candidate may know the type of questions that he may expect to get at the different educational centres in D. P. H. examinations, a specimen examination paper is given for each of the Universities of Cambridge, Dublin, and Durham, and the English, Irish and Scottish Conjoint Boards. The book is well indexed.

The Ophthalmoscope. A Monthly Review of Current Ophthalmology. Edited by SYDNEY STEPHENSON. Printed and published by George Pulman & Sons, Ltd., London.

THIS most excellent review of current ophthalmology is now in its eighth year of usefulness, and still enjoys, in even a greater degree than before, the esteem of those engaged in that special branch of surgery with which it deals. Each number consists of about eighty large pages of well-printed matter, containing "Original Communications," "Clinical Memoranda," and "Reviews," besides other matters.

It has a large staff of correspondents in all parts of the world, and so is kept in close touch with the progress of ophthalmology. To our thinking there is no ophthalmic journal printed in Great Britain more up to date or with a more reliable bibliography.

Diseases of the Stomach and Intestines. By R. COLEMAN KEMP, M.D., Professor of Gastro-intestinal Diseases in the New York School of Clinical Medicine. With 280 Illustrations, some in colours. Philadelphia and London: W. B. Saunders Co. 1910.

THE first fact that strikes the reviewer in connection with this volume is that it deals both with the diseases of the stomach

and with those of the intestines. There are a good many books limited to diseases of the stomach, about an equal number that deal only with intestinal diseases, and comparatively few dealing with the entire gastro-intestinal tract. Our own view is that the diseases of the stomach and those of the intestines are so intimately related from both a symptomatic and an ætiological aspect, to say nothing regarding treatment, that it is a mistake to deal with them separately, and in consequence we commend at the outset the present book.

The writer's intention has been to provide a practical reference book for general practitioners, and in this object he has succeeded. The beginning of the book is devoted to a consideration of the anatomy and physiology of the stomach, and is followed by a detailed account of the methods to be employed in examining into the gastric functions. This account is clear and moderately concise, and the descriptions in the text are well and copiously illustrated. One cannot, however, refrain from commenting on the type of some of the illustrations—a type which is becoming extremely common in books by American authors, and which to the casual glance reminds one more of a series of studies in the nude than of pictures adapted for a medical work. There are only a few of these illustrations in Dr. Kemp's book, but we think that the book would be improved by their omission or by the substitution of less artistic productions. We call attention to them more as a hint to subsequent authors than as constituting a blemish in the present work.

The general account of diseases of the stomach is readable and thorough. It is, of course, written from experience in America, and in consequence some of the dietetic and therapeutic suggestions are hardly applicable over here. Thus, few Irish patients are accustomed to consume cake and candy, unripe and dirty fruit, and so the advice to sufferers from recurrent acute gastric catarrh to avoid such delicacies will hardly be needed. At the same time the American style helps the English reader out of a groove, and its freshness and snap undoubtedly appeal. Amongst intestinal diseases the author deals with enteric fever because of its intestinal complications and for the purpose of differential

diagnosis. The same reasons might have led him to include a description of many other diseases in which gastro-intestinal disturbances occur; and on the whole, as the book is intended for qualified men, we think it would have been wise to devote the fourteen pages in which typhoid fever is discussed to a more ample consideration of duodenal ulcer—a subject to which only four pages are given out of a total of 700 in the entire book. Another subject which might have received more notice in a book of this size is hypertrophic tuberculosis of the cæcum. The condition is indeed mentioned more than once, but no adequate account of what often presents a most puzzling clinical picture is afforded. Some other omissions might be referred to, which an expert can hardly fail to notice, but on the whole this book is very complete, and may be regarded as a reliable and up-to-date guide to the diagnosis and treatment of almost all the diseases of the stomach and intestines which the general practitioner will encounter. We have pleasure accordingly in commending it to our readers.

A Manual of Medical Exercises. By DR. PERCY LEWIS, Honorary Medical Officer to the Victoria Hospital and Surgeon to St. Andrew's Convalescent Home, Folkestone. Second Edition. London: H. K. Lewis. 1910. Crown 16mo. Pp. 66.

THE first edition of this little book was published in 1897, but the exercises described in its pages have been republished since then in the author's works on spinal curvature and on delicate children.

After some preliminary observations, the book is divided into four parts. The first describes home exercises in nine series. Part II. gives exercises for home or gymnasium; Part III., gymnasium exercises; and Part IV., respiratory exercises.

The author tells us that a few of the exercises are original, the majority having been collected from various sources. Some of the respiratory exercises are taken by permission from Dr. Harry Campbell's "*Respiratory Exercises in the Treatment of Disease.*"

One of the features of the book is the graphic way in which its pages are illustrated by tiny diagrams. There are thirty-five of these little drawings, which do much to elucidate the text.

Record of Sports, 1909. Liverpool : Royal Insurance Co., Ltd.
April, 1910. Pp. 197.

THIS extremely neat and tastefully got-up little volume, of which the seventh edition has just been brought out, should be found an invaluable work of reference to all interested in sports and games of every kind.

The records are brought thoroughly up to date, and amongst the new features added are Angling Records, embracing fly and bait casting ; a comparative statement of University and Public Schools' Athletics, and others too numerous to mention. A brief history of the various sports is given at the head of each, and the whole is very fully indexed. In addition, the first class Cricket Fixtures for this season, as well as the dates of many other forthcoming events, are given.

This handy little work is brought out by the Royal Insurance Company, Ltd., Royal Insurance Buildings, 1 North John Street, Liverpool, who will be pleased, so far as their stock will permit, to forward a copy to any of our readers who care to apply for it.

COLLAPSE AFTER INJECTION OF DIPHTHERIA SERUM.

In *The Prescriber* for February, 1910 (Vol. IV., No. 41, page 27). Dr. Duncan Carmichael, of Boddam, Aberdeenshire, reports an instance of this accident. The patient was a healthy girl, aged nine, to whom 1,000 units of diphtheria serum were given for the purpose of immunisation. About eight minutes after receiving the injection she suddenly fell on a concrete floor, and was seized with convulsions, which lasted about a minute and a half. Persistent vomiting and sickness continued for some thirty-six hours after this seizure. Dr. Carmichael has observed that unfavourable symptoms are less likely to follow large doses than small doses of the antitoxin.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR CHARLES BALL, F.R.C.S.I.

General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF OBSTETRICS.

President—HENRY JELLETT, M.D., F.R.C.P.I.

Sectional Secretary—GIBBON FITZGIBBON, M.D.

Friday, February 25, 1910.

THE PRESIDENT in the Chair.

Chronic Pyosalpinx with Ovarian Abscess and Sinus.

DR. E. HASTINGS TWEEDY exhibited this specimen which had been removed from a lady who had been ill for twelve months as a result of puerperal sepsis. She had been delivered in the country, and neither the doctor nor the nurse had been in time for the delivery. She got very ill, and was very septic. He explored the uterus, and took a culture, and found only a diplococcus like that of pneumonia. During labour the patient had a cough, and expectorated some muco-purulent discharge, but the doctor said there was no pneumonia present. He was again sent for in a fortnight, and found her worse than before. He performed Prior's operation. He packed the posterior fornix with iodoform gauze, and gave her diplococcus vaccine. She improved for a time, but after six weeks he was again sent for, and this time found a tumour about the size of a fist in the region of the right broad ligament. With great difficulty he opened into

an abscess about Poupart's ligament. A culture once again grew only a diplococcus. After six months he saw her again, and she was a mere skeleton, and in a wretched state. The sinus was partially closed, and he opened it freely. Her temperature fell, and she got sufficiently well to be sent to the country. She came back with temperature 105° and palpitation of the heart. There was a large tube felt on the right side. The uterus was normal. When she menstruated the discharge flowed freely through the sinus. Again he sent her away, and again she got a temperature, and he decided a fortnight ago to do a radical operation. An old tubercular sinus that she had had as a child, and which was healed for many years, re-opened, and a quantity of very tubercular pus continuously exuded from it. He operated last week. The patient had been obviously losing flesh daily. The pulse was never under 110, and the evident involvement of the heart made him fear the operation. He injected the sinus with iodine, and cut round it and clamped it. Whilst doing so he unfortunately opened into it. He opened the abdomen and removed the tube. He plugged with iodoform gauze all round the raw surface. The patient's pulse was 130 when she went to bed. He waited until the third day to take out the plug. The plug came out with the greatest ease, but he felt convinced that her vitality was so low that no adhesions were made, for within two hours after the plug was taken out the pulse rose to 150 and 160, and she died acutely septic two days afterwards. He greatly feared that the incision he accidentally made in the sinus had been handled by the glove. The bacteriological examination of the pus failed entirely to indicate the acutely septic nature of the sinus discharge.

PROFESSOR ALFRED SMITH said they could sympathise with Dr. Tweedy on the unfortunate result of so difficult a case. It was interesting to note that while septic troubles following parturition were generally regarded as bilateral, the case was exceptional in being unilateral. He had read that the best protective for surrounding an area where they were likely to open an abscess cavity was a rubber dam, which was used inside the abdomen, and could be adapted to any little crevice. He did not, however, think it would have made any difference in Dr. Tweedy's case.

THE PRESIDENT said he thought Dr. Tweedy was right in attributing the fatal result to his own action; but he doubted

if the infection came from the sinus: he thought it was just as likely to have come from the tissue round the abscess in the peritoneal cavity.

DR. TWEEDY replied.

*Pregnancy and Labour after Ventro-fixation of the Uterus
(Hysteropexis Hypogastrica).*

SIR WILLIAM SINCLAIR read a paper with the above title.

THE PRESIDENT said they were under a double debt of gratitude to Sir William Sinclair, first, for the trouble he had taken in coming over, and, second, for declining to avail himself of the privilege of having his paper left undiscussed. He was sure that the paper would lead to a most interesting discussion.

SIR WILLIAM SMYLY said he had come to the conclusion that the very best operation for cases such as had been referred to was ventro-suspension, but through his attendance at the Academy he had been so much impressed with Dr. Jellett's results with the Alexander Adams' operation that he had recently been trying it. He believed that one should give a woman a chance with a pessary before resorting to operation. His own experience of ventro-suspension had been a very happy one. If he were to read a description of Sir William Sinclair's operation of ventro-fixation simply in a book, he would not think very much of it, but to hear Sir William Sinclair's experience of it put the operation in a very different light. On theoretical grounds it did not seem to him to be physiological to bring the lower uterine segment right up against the abdominal wall; but that did not make the least difference if the results were good.

PROFESSOR ALFRED SMITH agreed that there was a large number of cases in which excellent results were got by the use of a pessary. If every case of displacement was to be treated by ventro-fixation they could not supply the patients with beds in Dublin. The type of case that seemed to him to be most suitable for the Alexander Adams' operation was a simple backward displacement that reduced easily, and was found to have gone back again next day. The aim of operation should be to leave the organ as nearly as possible in its normal position. There was no organ so mobile as the uterus, and he thought its fixation a very great objection. Still they could not overlook the brilliant results in the cases mentioned by Sir William Sinclair. His own

practice in cases where he had satisfied himself that the organs were capable of performing their functions was to thrust a forceps through the rectus muscle, and seize the round ligament on either side, and draw them right out through the muscles and suture them there to the aponeurosis. The operation was simple, and the results were excellent; patients returned with the uterus *in situ* without pessary or support. He must, of course, be influenced by the excellent results obtained by Sir William Sinclair from ventro-fixation.

DR. HORNE said he had a patient who had gone through ten confinements who suffered from retroflexion of the uterus, and who had to wear a pessary between the pregnancies. The result of ventro-fixation in 800 to 1,000 cases in America, when the women became pregnant, was that 10 per cent. aborted, and the mortality of full-time pregnancy was 2 per cent. and 3 per cent. In view of such results one felt some hesitation in tying up the uterus. He thought the brilliant results obtained by Sir William Sinclair were due to the method by which he performed the operation, in suturing above the isthmus, so that dragging on the posterior ligaments did not take place, and abnormalities did not occur when the women became pregnant.

DR. TWEEDY said that Howard Kelly popularised many operations, and gynaecologists owed him and the Johns Hopkins Hospital a considerable debt of gratitude. The operation described by Kelly was the one which he (Dr. Tweedy) personally performed in the vast majority of instances, and he did ten ventro-suspensions to one of all the other methods combined. Excellent results were got by all the methods. He had done ventro-suspension at least 300 times, and in Dublin during the last fifteen years it had probably been performed well over a thousand times. As Master of the Rotunda he saw a number of women, who had been operated on by himself and others, delivered, and he had never once seen a single case that required operative treatment after ventro-suspension. A patient of his had had six normal deliveries after ventro-suspension, forceps or other instrumental delivery was never found necessary, and the uterus was in as good a position as on the first day it was fixed. As he conceived the operation, the uterus was fixed down to the empty bladder, and rose or fell as the bladder filled and emptied. In every instance he had found long adhesions lying directly on to the bladder, so that no intestines could fall beneath them. The adhesions were macroscopically

identical with the round ligaments. There was plenty of space for development in pregnancy. He was convinced that after a time, even if these ligaments were severed, the uterus would remain in position, as Kelly's operation was a curative one. Sir William Sinclair's results were brilliant, but Kelly's operation was hard to beat; he supposed its failure did not amount to anything like 5 per cent.

THE SECRETARY said he still believed in the use of the pessary. Women in the child-bearing period were entitled to a period of trial with it. He believed that a large number of cases would be cured of uncomplicated retroversions by wearing a pessary, particularly in those cases where the displacement commenced after child-birth and was probably associated with subinvolution. These cases, if treated with pessary shortly after confinement, frequently ended in six or eight months in complete cure. And a large number of those cases which did not receive treatment for a year or so after the beginning of the retroversion, if then treated by pessary, and this was followed by pregnancy, would be cured of the retroversion by wearing a pessary for a few months after delivery, and thus allowing the uterus and ligaments to involute fully. In cases of long sterility one was justified in supposing something more than retroversion, and in opening the abdomen to see what was preventing pregnancy. The operation he generally did was Kelly's operation. When a woman was past, or near the end of, the child-bearing period, he did not think it mattered whether they fixed the uterus firmly or not.

SIR CHARLES BALL said that in the treatment of extensive prolapse of the rectum they almost always resorted to colopexy. Earlier operations had failed largely because a peritoneal surface was stitched to a peritoneal surface. Such adhesions stretched rapidly, and disappeared in a great many cases after a short time. They had therefore to do something more extensive, and to insure that the stitches included the muscular coat of the intestines, and that this was stitched down firmly to the iliac fascia. In the case of a lady on whom he had to do a colopexy, and who had had a retroflexed uterus stitched to the front abdominal wall, he saw no trace of adhesions of any kind, or any mark on the surface of the uterus.

DR. SPENCER SHEILL said that, in adding a few words to express his indebtedness to Sir William Sinclair for his excellent paper, in which he had so clearly set forth powerful arguments advocating

a most valuable operative procedure, he would like to point out the necessity of approaching any discussion upon the merits or demerits of any particular operation with an open mind. He believed the reason that so many operating gynecologists were divided in their opinions respecting the advantages of one method of operating for the cure of retro-deviations of the uterus over another method, was because, when a man begins to perform one variety of operation, and becomes expert at it, his cases being uniformly successful, he rarely gives up "the bird in the hand for the two in the bush," and so he views the question with a not impartial mind. He said Alexander Adams is one of the most vigorous opponents of the operations of ventro-suspension and ventro-fixation of the uterus, the reason being quite apparent, so it was pleasant to hear from the distinguished guest of the Section the opinion of one who by actual operative experience has made himself an authority competent to express views upon the subject worthy of closest attention. Dr. Sheill said it appeared to him that there was a place for all the operations—fixation, suspension, and shortening of the round ligaments—and that each had its own special indications. He considered Alexander Adams' operation as useless for the cure of retro-deviations when complicated by prolapse, as ventro-fixation is undesirable in a simple case of backward displacement in a young married woman. As to the respective merits of the external and internal methods of shortening the round ligaments, it was worthy of note, he said, that Adams recommends the former, because he considers the portion of round ligament in the external abdominal ring to be the weakest part, and it being cut away will not permit of recurrence as after the internal operation. It was said that a grave danger of ventro-fixation was "too large an area of adhesion." Dr. Sheill believed the causes of this to be too much injury to the uterine peritoneum, and slight infection of the abdominal sutures, the remedies being obvious. Dr. Tweedy (the Master of the Rotunda) described two thick rope-like ligaments—"in appearance very like normal round ligaments"—as being the ideal result following ventro-fixation; but he (Dr. Sheill) could not agree with him, as he held that there should be a vertical line of adhesion from the base of the anterior cul-de-sac to above the isthmus of the uterus, and not distinct ligaments which were liable to cause strangulation of intestine. He believed the dangers of ventro-fixation in the child-bearing

period were dependent upon the placing of sutures too near the fundus in front, or even in the fundus or posterior to it, as has been advocated, as well as upon the adhesion, whether it was peritoneum to peritoneum or peritoneum to fascia. Dr. Sheill said he reported to the Section some years ago a case of his in which he performed ventro-suspension and myomectomy, the patient having previously aborted four times. Again becoming pregnant after the operation, she aborted a twin at two months, carrying to term the other, when she had an uneventful labour. The note of the case was as follows:—"With regard to the operation itself, it is interesting to note that suspension in this case caused no pain, unusual vomiting, or frequency of micturition during gestation, and no dragging or alteration in shape of the uterus other than a slight dimple at the fundus. Vaginal examination a month later showed the uterus normally involuted and in perfect position." Since then he had delivered her of a second child, and this pregnancy was uneventful in every detail. Dr. Sheill has performed the operation of ventro-fixation on other cases of displacement and descent since then. One patient became pregnant, and labour was normal in every way; in none of the others has there been any recurrence or complication so far.

THE PRESIDENT said that he wished to convey to Sir William Sinclair the thanks of the Section for the paper he had read. The fact that it was so fully discussed showed how much the Section appreciated his kindness in coming over to Ireland; he personally thought the use of the pessary a procedure of necessity, but not of choice, and that consequently operation was in most cases preferable. He wished to draw a clear line of distinction between ventral suspension and ventral fixation, as several of the speakers had used the terms as synonymous. Kelly's operation was one of ventral suspension, and it created a bond of union that would give way in pregnancy, or probably without it. In either case it had probably first done its work and enabled the uterus to gain its normal tone. Ventral fixation was an operation intended to create a positive union which would not give way under any circumstances. The absence of trouble during pregnancy after the operation recommended by Sir William Sinclair, which was essentially one of ventral fixation, was due to the fact that he fixed the uterus very

low down. Some time ago he (the President) reported some 400 cases of the Alexander Adams' operation from different sources. His statistics showed that there was a return of the displacement in about $\frac{1}{2}$ per cent., while Sir William Sinclair's showed 20 per cent. This showed what an effect the collecting of statistics had on the morality of the compiler. He had personally done some sixty cases, and had only had a recurrence in one case in which he had shortened one of the ligaments only. Kelly's operation, so far as recurrence of displacement or difficulty was concerned, might be put in an almost similar category.

SIR WILLIAM SINCLAIR, in reply, said that the remark made by Sir Charles Ball confirmed him in the belief that it was only to the extent to which the adhesions gave way that Kelly's operation was a benefit to the patient. The additional ligaments were not imbedded, and were not muscular, and would not contract when they relapsed, and to that extent were in the way. He had not discarded the pessary altogether, but statistics over a long series of cases showed that they succeeded in only 11 per cent., and the time the pessary was worn for was varied from a year to seventeen years.

A SATISFACTORY HYPNOTIC.

OF all the many hypnotics at the disposal of the Medical Profession there is probably none that gives as uniform satisfaction under all conditions as Bromidia (Battle). This now well-known preparation is stated to contain in each fluid drachm 15 grains each of chloral hydrate and bromide of potassium, and one-eighth of a grain each of extract of cannabis indica and extract of hyoscyamus. The sleep produced is of a true physiological character. It is dreamless, and the patient awakes refreshed and vigorous. In proper dosage, bromidia is perfectly safe, and does not depress the heart. A teaspoonful by measure should be given in water, and, if necessary, in exceptional cases, repeated hourly, or every two or three hours, until not more than four doses have been administered. It is needless to state that, in order that the maximal effect may be obtained from the initial dose, the patient should be placed under conditions favourable to the induction of sleep. Sample and literature may be obtained on application to Toberts & Co., 76 New Bond Street, London, W. (Agents for Great Britain and Ireland), or to Battle & Co., St. Louis, Mo., U. S. A.

SANITARY AND METEOROLOGICAL NOTES.

VITAL STATISTICS.

For four weeks ending Saturday, April 23, 1910.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended April 23, 1910, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 22.4 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,151,790. The deaths registered in each of the four weeks ended Saturday, April 23, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	April 2	April 9	April 16	April 23			April 2	April 9	April 16	April 23	
22 Town Districts	20.7	23.2	23.2	22.4	22.4	Lisburn -	4.5	36.4	36.4	22.7	25.0
Armagh -	27.5	34.4	13.7	27.5	25.8	Londonderry	13.2	15.6	20.4	13.2	15.6
Ballymena	14.4	14.4	19.2	4.8	13.2	Lurgan -	22.1	17.7	8.9	8.9	14.4
Belfast -	18.4	22.4	24.9	21.3	21.8	Newry -	21.0	21.0	29.4	8.4	20.0
Clonmel -	46.2	35.9	20.5	35.9	34.6	Newtown- ards	11.4	17.2	34.3	40.1	25.7
Cork -	32.9	34.2	22.6	23.3	28.2	Portadown -	20.7	25.8	31.0	25.8	25.8
Drogheda -	24.5	32.7	32.7	45.0	33.7	Queenstown	13.2	33.0	19.8	19.8	21.5
Dublin (Reg. Area)	19.8	23.4	21.5	24.3	22.3	Sligo -	52.8	19.2	9.6	9.6	22.8
Dundalk -	23.9	39.9	12.0	31.9	26.9	Tralee -	15.9	5.3	26.4	10.6	14.6
Galway -	38.8	27.2	35.0	15.5	29.1	Waterford -	19.5	17.5	33.1	29.2	24.8
Kilkenny -	19.7	—	14.7	29.5	16.0	Wexford -	23.3	14.0	23.3	14.0	18.7
Limerick -	23.2	17.8	20.5	19.1	20.2						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, April 23, 1910, were equal to an annual rate of 1.9 per 1,000, the rates varying from 0.0 in thirteen of the districts to 11.4 in Newtownards, the 7 deaths from all causes for that district including one from whooping-cough and one from measles. Among the 160 deaths from all causes registered in Belfast are 8 from whooping-cough, 8 from measles, one each from diphtheria, *pyrexia* (origin uncertain) and enteric fever, and 3 from diarrhoeal diseases. Of the 34 deaths from all causes registered in Cork one is from whooping-cough. Included in the 15 deaths from all causes registered in Waterford are one from typhus and one from diphtheria. One death from typhus is included in the 4 deaths from all causes registered in Galway. Among the 11 deaths from all causes registered in Drogheda are 2 from whooping-cough, and of the 5 deaths from all causes registered in Portadown one is from enteric fever.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 402,928, that of the City being 310,298, Rathmines 37,047, Pembroke 28,948, Blackrock 9,013, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, April 23, 1910, amounted to 221—126 boys and 95 girls; and the deaths to 200—92 males and 108 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 25.9 in every 1,000 of the population. Omitting the deaths (numbering 12) of persons admitted into public institutions from localities outside the Area, the rate was 24.3 per 1,000. During the sixteen weeks ending with Saturday, April 23, the death-rate averaged 25.0, and was 3.1 below the mean rate for the corresponding portions of the ten years 1900-1909.

The total deaths (amounting to 188) included 5 deaths from whooping-cough, 2 deaths from diphtheria, and 2 deaths of children under 5 years of age from epidemic diarrhoea; the deaths

of 2 children under 5 years of age—one from enteritis and one from *gastro-enteritis*—were also registered. In each of the three preceding weeks deaths from diphtheria had been 0, one, and 0; deaths from diarrhoeal diseases had been 0, 4, and 2; and deaths from whooping-cough had been one, 0, and 2. There were 2 deaths from influenza, which in each of the three preceding weeks had caused 6, 3, and 5 deaths, respectively.

The deaths (20) from pneumonia (all forms) comprised 10 deaths from broncho-pneumonia and 10 deaths from *pneumonia* (not defined).

The deaths (49) from all forms of tuberculous disease included 31 from tubercular phthisis (*phthisis*), 5 from tubercular meningitis, one death from *tabes mesenterica*, and one from tubercular peritonitis, and 11 deaths from other forms of the disease. Deaths from all forms of tuberculous disease in the three preceding weeks had been 18, 31, and 31 respectively.

There were 5 deaths from carcinoma, and 6 deaths from cancer, malignant disease (undefined).

Five deaths of prematurely born infants were recorded.

Diseases of the heart and blood-vessels caused 37 deaths, diseases of the brain and nervous system accounted for 12 deaths, and of 22 deaths from diseases of the respiratory system bronchitis caused 21 deaths.

Of 3 deaths from violence, one was caused by a tram accident, one by accidental poisoning with nitric acid, and one by a corrosive poison, self-administered.

In eight instances the cause of death was “uncertified,” there having been no medical attendant during the last illness; these cases include the deaths of 2 children under 5 years of age (including one infant under one year of age), and the deaths of 4 persons aged 60 years and upwards.

Forty-nine of the persons whose deaths were registered during the week were under 5 years of age (29 being infants under one year, of whom 9 were under one month old), and 68 were aged 60 years and upwards, including 34 persons aged 70 and upwards, of whom 8 were octogenarians, and one (a female) was stated to have been aged 98 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," and the "Tuberculosis Prevention (Ireland) Act, 1908," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. R. A. O'Donovan, Medical Superintendent Officer of Health for Kingstown Urban District; and by Dr. Bailie, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended April 23, 1910, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain) ^b	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Whooping-cough	Cerebro-spinal Fever	Tubercular Phthisis (<i>Phtisis</i>)	Total
City of Dublin	April 2	-	•	•	5	1	-	5	-	-	5	16	-	•	-	17	51
	April 9	-	•	•	5	3	-	6	-	-	9	11	-	•	-	9	44
	April 16	-	•	•	7	3	-	3	-	1	5	9	-	•	-	19	47
	April 23	-	•	•	8	1	-	11	-	1	3	7	-	•	-	26	57
Rathmines and Rathgar Urban District	April 2	-	•	•	1	-	-	2	-	-	-	-	-	•	•	•	3
	April 9	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	4
	April 16	-	•	•	1	-	-	3	-	-	-	-	-	•	•	•	4
	April 23	-	•	•	1	-	-	-	-	-	-	-	-	•	•	•	1
Pembroke Urban District	April 2	-	-	-	-	-	-	1	-	-	-	1	-	1	-	•	3
	April 9	-	-	-	1	-	-	-	-	2	-	1	-	5	-	•	9
	April 16	-	-	-	-	-	-	1	-	-	-	-	-	1	-	•	2
	April 23	-	-	-	-	-	-	1	-	-	-	-	-	-	-	•	1
Blackrock Urban District	April 2	-	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-
	April 9	-	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-
	April 16	-	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-
	April 23	-	•	•	-	-	-	-	-	-	-	-	-	•	-	•	-
Kingstown Urban District	April 2	-	•	•	-	-	-	-	-	-	-	-	-	•	•	-	-
	April 9	-	•	•	-	-	-	-	-	-	-	-	-	•	•	-	-
	April 16	-	•	•	-	-	-	-	-	-	-	-	-	•	•	1	1
	April 23	-	•	•	-	-	-	-	-	-	-	-	-	•	•	1	1
City of Belfast ^a	April 2	-	•	•	12	-	-	5	-	-	2	2	-	•	•	24	45
	April 9	-	•	•	7	1	-	9	-	-	4	7	-	•	•	28	56
	April 16	-	•	•	7	-	-	6	-	-	2	10	1	•	•	12	38
	April 23	-	•	•	13	1	-	10	-	-	1	4	-	•	•	20	49

^a The Registrar of Belfast Urban No. 4 reports that one death from beri-beri was registered during the week ended 23rd April. ^b Continued Fever.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended April 23, 1910, 3 cases of measles remained under treatment at its close.

Ten cases of scarlet fever were admitted to hospital, 12 were discharged, and 57 cases remained under treatment at the close of the week. This number is exclusive of 15 convalescents from the disease under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital. At the close of the three preceding weeks the cases in hospital had been 62, 62, and 59 respectively.

One case of typhus was admitted to hospital during the week, and 7 cases remained under treatment at its close.

Sixteen cases of diphtheria were admitted to hospital, 8 were discharged, there were 2 deaths, and 40 patients remained under treatment at the close of the week. The cases in hospital at the close of the three preceding weeks had numbered 34, 37, and 34 respectively.

Six cases of enteric fever were admitted to hospital during the week, 6 were discharged, and 23 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 9 cases of pneumonia were admitted to hospital, 11 were discharged, there were 4 deaths, and 47 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, April 23, in 76 large English towns, including London (in which the rate was 13.1), was equal to an average annual death-rate of 13.7 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 16.3 per 1,000, the rate for Glasgow being 15.9, and for Edinburgh 14.2.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended April 23. From this report it appears that of a total of 38 cases notified, 12 were of scarlet fever, 13 of phthisis, 9 of diphtheria, 3 of erysipelas, and one of puerperal fever.

Among the 343 cases of infectious diseases in hospital at the close of the week were 181 cases of scarlet fever, 45 of measles, 51 of phthisis, 15 of whooping-cough, 31 of diphtheria, 8 of erysipelas, 2 of chicken-pox, 4 of enteric fever, and 2 of cerebro-spinal fever.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of April, 1910.

Mean Height of Barometer,	-	-	-	29.828 inches.
Maximum Height of Barometer (1st, at 9 a.m.),	30.505	..		
Minimal Height of Barometer (13th, at 4 p.m.),	28.939	..		
Mean Dry-bulb Temperature,	-	-	-	45.1°.
Mean Wet-bulb Temperature,	-	-	-	42.3°.
Mean Dew-point Temperature,	-	:	-	39.0°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.241	inch.		
Mean Humidity,	-	-	-	80.1 per cent.
Highest Temperature in Shade (on 18th),	-	64.0°.		
Lowest Temperature in Shade (on 1st),	-	32.0°.		
Lowest Temperature on Grass (Radiation) (1st),	27.0°.			
Mean Amount of Cloud,	-	-	-	67.2 per cent.
Rainfall (on 19 days),	-	-	-	2.197 inches.
Greatest Daily Rainfall (on 19th),	-	-	-	.480 inch.
General Directions of Wind,	-	-	-	N.W., N., W.

Remarks.

A cold showery month, north-westerly winds predominating. Only from the 18th to the 21st inclusive was a genial warmth experienced during the prevalence of a S.W. wind. On the 18th the thermometer rose to 64.0° in the screen, on the 21st the range of temperature was from a minimum of 51.4° to a maximum of 62.2°. There was a rainless period in Dublin from the 6th to the 12th, but the afternoon of the latter day was very wet as well as cold. From the 12th to the 25th rain fell daily in larger or smaller quantity, the precipitation taking the form of sleet on the 13th and hail on the 16th. On the afternoon of Saturday, the 16th, a very severe thunderstorm passed over the English Midlands in a south-easterly direction. In the north and north-east of London, where the storm began late in

the afternoon, it was especially violent—at Greenwich the rain and melted hail measured 1.5 inches in the gauge. In the last week there were frequent hail showers, thunder and lightning accompanying the showers at many British stations. The cold weather of the month reached the United Kingdom by means of north-westerly winds blowing from Iceland, in which country the severity of the cold and frost seems to have been quite unusual. April, 1910, may be described as a planet month. An occultation of Mars by the Moon was splendidly seen on the night of the 13th. Jupiter was a conspicuous object in the southern sky in the early hours of night, while Venus was resplendent as a morning star; and, lastly, Mercury was visible in the north-western sky on several successive evenings toward the close of the month.

In Dublin the arithmetical mean temperature (45.9°) was 1.7° below the average (47.6°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 45.1° . In the forty-six years ending with 1910, April was coldest in 1879 (the cold year) (M. T. = 44.5°), and warmest in 1893 (M. T. = 51.4°). In 1909 the M. T. was 48.6° .

The mean height of the barometer was 29.828 inches, or 0.022 inch below the average value for April—namely, 29.850 inches. The mercury rose to 30.505 inches at 9 a.m. of the 1st, and fell to 28.939 inches at 4 p.m. of the 13th. The observed range of atmospheric pressure was, therefore, 1.566 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 45.1° , or 1.1° above the value for March, 1910. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* $\times .476$), the value is 45.6° , or 1.7° below the average mean temperature for April, calculated in the same way, in the thirty-five years, 1871–1905, inclusive (47.3°). The arithmetical mean of the maximal and minimal readings was 45.9° , compared with a thirty-five years' (1871–1905, inclusive) average of 47.6° . On the 18th the thermometer in the screen rose to 61.0° —wind, S.W.; on the 1st the temperature fell to 32.0° —wind, calm. The minimum on the grass was 27.0° on the 1st.

The rainfall was 2.197 inches, distributed over 19 days. The average rainfall for April in the thirty-five years, 1871–1905, inclusive, was 1.940 inches, and the average number of rainy days was 16. The rainfall, therefore, and also the rain-days were

in excess of the average. In 1877 the rainfall in April was very large—4.707 inches on 21 days. On the other hand, in 1873, only .498 inch was measured on 8 days. In 1909, 4.078 inches fell on 22 days.

Fog was observed on the 1st, 2nd, and 19th. High winds were noted on 6 days, but reached the force of a gale only on the 18th. Hail fell on the 3rd, 16th, 23rd, 24th, 25th, and 28th; sleet on the 13th. The temperature rose above 60° in the screen on 2 days—the 18th and 21st. It failed to reach 50° on 9 days. It once fell to 32° in the screen, and on 8 nights it fell to or below 32° on the grass. The mean lowest temperature on the grass was 36.0°, compared with 39.0° in 1909, 35.4° in 1908, 36.7° in 1907, 33.6° in 1906, 37.3° in 1905, 39.1° in 1904, 37.0° in 1903, 36.8° in 1902, 37.3° in 1901, and only 31.6° in 1887.

The rainfall in Dublin during the four months ending April 30th amounted to 9.871 inches on 71 days, compared with 8.628 inches on 63 days in 1909, 8.704 inches on 74 days in 1908, 6.288 inches on 64 days in 1907, 9.120 inches on 77 days in 1906, 7.844 inches on 71 days in 1905, 9.056 inches on 74 days in 1904, 10.176 inches on 78 days in 1903, 7.175 inches on 59 days in 1902, 6.520 inches on 58 days in 1901, only 3.203 inches on 46 days in 1891, and a thirty-five years' (1871–1905) average of 8.070 inches on 66 days.

Mr. W. H. Clark, B.A., reports that at the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 29.825 inches, the range of atmospheric pressure being from 30.502 inches at 9 a.m. of the 1st to 29.000 inches at 9 a.m. and 9 p.m. of the 13th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 45.4°. The arithmetical mean of the daily maximal and minimal temperatures was 45.9°. The screened thermometers rose to 64.7° on the 18th, and fell to 29.6° on the 1st. On the 1st the grass minimum was 18.2°. Rain fell on 17 days to the amount of 1.998 inches, the greatest fall in 24 hours being .450 inch on the 19th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 116.15 hours on 29 days, of which 10.1 hours occurred on the 26th, and 9.4 hours on the 25th. The mean daily duration of sunshine was 4.0 hours. The mean temperature of the soil at 9 a.m. at a depth of one foot was 46.1°; at a depth of 4 feet it was 46.0°.

Mrs. Olive F. Symes returns the rainfall at Druid Lodge, Killiney, Co. Dublin, at 1.73 inches on 12 days. The largest measurement in 24 hours was .40 inch on the 12th. The average rainfall in April at Cloneevin, Killiney, in the 24 years, 1885 to 1908 inclusive, was 1.870 inches on 15.2 days. Since January 1, 1910, 8.49 inches have fallen on 61 days at Druid Lodge.

Dr. W. S. Ross recorded 2.00 inches of rain on 18 days at Clonsilla, Greystones, the largest measurement in 24 hours being 41 inch on the 6th. The mean temperature was 45.0°.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall amounted to 1.845 inches on 12 days. The heaviest fall in 24 hours was .500 inch on the 12th. The total rainfall in 1910, up to April 30th, was 11.080 inches on 61 days.

Dr. Launcelot T. Burra, Resident Medical Officer at the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, reports that the rainfall at that place was 1.826 inches on 21 days, the maximal fall in 24 hours being .355 inch on the 12th. The mean temperature of the air was 44.4°, the thermometer in the screen having risen to 63.2° on the 18th and fallen to 31.0° on the 1st. The mean maximal temperature was 51.1°, the mean minimum being 37.7°.

Dr. Arthur S. Goff reports that the rainfall at Lynton, Dundrum, Co. Dublin, was 2.39 inches on 20 days. The greatest daily rainfall was .45 inch on the 12th. The mean shade temperature was 45.7°, compared with 48.3° in 1901, 46.6° in 1902, 45.9° in 1903, 48.9° in 1904, 46.4° in 1905, 45.1° in 1906, 46.4° in 1907, 44.5° in 1908, and 48.2° in 1909. The thermometric range was from 31° on the 3rd to 67° on the 20th. Hail fell on the 3rd, 23rd, 25th, and 27th.

Mr. T. Bateman, of the Green, Malahide, Co. Dublin, returns the rainfall at 1.755 inches on 18 days. The greatest fall in 24 hours was .215 inch on the 23rd. The shade mean temperature was 43.2°, the extremes being—highest, 63° on the 18th; lowest, 28° on the 1st.

Captain Edward Taylor, D.L., gives the rainfall at Ardgillan, Balbriggan, Co. Dublin, as 1.91 inches on 19 days, the rainfall being 0.11 inch below, and the rain-days 3 in excess of, the average. The heaviest fall in 24 hours was .33 inch on the 1st. The rainfall from January 1st equals 9.47 inches on 61 days, that is, 1.22 inches and 1 day in excess of the average. The

thermometers in the screen rose to 62.7° on the 18th, having fallen to 30.8° on the previous day.

At 21 Leeson Park, Dublin, Dr. Christopher Joynt, F.R.C.P.I., measured 2.295 inches on 20 days, the largest amount recorded in 24 hours being .420 inch on the 12th.

At the Ordnance Survey Office, Phoenix Park, Dublin, rain fell on 21 days to the amount of 2.175 inches, the greatest measurement in 24 hours being .460 inch on the 19th. The total amount of bright sunshine was 155.4 hours, of which 11.0 hours fell on the 26th, the brightest day of the month.

In Cork, according to Mr. W. Miller, the rainfall amounted to 1.66 inches on 20 days, .45 inch being measured on the 14th. Since January 1, 1910, 12.36 inches of rain have fallen in Cork on 83 days. The mean temperature was 43.9° , or 3.9° below the average of 25 years.

At the Rectory, Dunmanway, Co. Cork, the Rev. Arthur Wilson, M.A., recorded 2.40 inches of rain on 20 days. The heaviest falls in 24 hours were .44 inch on the 12th and .43 inch on the 14th. The characteristics of the month were short showers, cold wind, and intervals of bright sunshine. The rainfall at Dunmanway in the four months ended April 30 amounted to 21.57 inches on 89 days.

Mr. W. Holbrow reports that the rainfall at Derreen, Kenmare, Co. Kerry, in March amounted to 6.45 inches on 16 days, the largest measurement being 1.74 inches on the 1st. In April, 3.56 inches of rain were registered on 21 days, the largest measurement being .45 inch on the 17th. April was tolerably fine at Derreen, but rather cold, with showers of sleet and snow.

LITERARY NOTE.

MESSRS. BATTLE & Co., of St. Louis, Mo., U. S. A., have recently issued the second of their series of Coloured Charts on Dislocations. This series forms a most valuable and interesting addition to any medical library. The charts will be sent, free of charge, on application to Messrs. Battle & Co., and back numbers will also be supplied if desired, provided application is made before the editions are exhausted.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

“ Zana ” Effervescent (Nauheim) Baths.

By the “ Zana ” method of carbonated baths for the Nauheim treatment at home, which is patented, the gas is liberated from an alkaline carbonate contained in the “ Aerating Cushions,” by the action of formic acid, a weak and non-corrosive organic acid constituting the “ Generating Fluid.” This acid, although a well-known product of the bee and the ant, itself has curative properties, being considered one of the most important and valuable constituents of the famous peat baths or “ Moorbäder ” at Marienbad, where they are extensively used. To prepare the “ Zana ” bath, all that is necessary is to pour the contents of the bottle of “ Generating Fluid,” which serves to liberate the carbonic acid gas, into the bath-water. The bath is then entered by the patient, holding in each hand one of the “ Aerating Cushions.” On immersion of the little “ Aerating Cushions ” (enclosed in each “ Zana-Bath ” package) the whole bath becomes charged with nascent carbonic acid gas, effervescing continuously and sparkling like champagne for fully half-an-hour. This evolution of gas is nevertheless always under control of the bather, for it may be reduced at will, or accelerated by gently squeezing the “ Cushions.” The gas is almost entirely absorbed by the water and is deposited on the bather’s body in myriads of minute bubbles, having the effect of stimulating circulation throughout the system, soothing overwrought nerves and creating at once that same delightful sense of invigoration, comfort and well-being which characterises the natural carbonated baths. As the carbonic acid gas remains practically suspended in the bath-water, the amount escaping to the surface being very trifling, the atmosphere of the bathroom is not contaminated. The ingredients for these medicinal and refreshing baths are sold in handy packets, complete for one normal full-strength bath, or two weak baths (the latter suitable for children), with full directions for use, by the Hygienic Company, 36 Southwark Bridge Road, London, S.E. The price to the Medical Profession is twenty-five shillings per dozen, carriage paid.

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EDVARDUS VII., REX ET IMPERATOR.

OBIIT PRIDIE NONAS MAIAS MCMX, ÆTATIS SUE LXIX.

WITH pained surprise and apprehension the Nation and Empire learned on the morning of Friday, May 6, 1910, that King Edward was gravely ill. A few hours later the worst fears of the Sovereign's devoted subjects were realised, and with mingled grief and consternation they learned that their beloved King had passed away. The sad news, flashed to the Earth's remotest bounds, evoked universal sorrow, sympathy, and regret.

His Majesty had been for a long time the subject of glycosuria of varying degree, and this may possibly have had a causal relation to the state of unconsciousness into which the illustrious patient passed some hours before death. It was known also to his physicians that King Edward had suffered for years from pulmonary emphysema, with a tendency to more or less bronchial catarrh. The usual symptoms of ineffective and distressing cough and dyspnoea accompanied his bronchial attacks. Among the physical signs was crepitation at the base of both lungs. The laryngeal symptoms, including slight spasm of the vocal cords, were those of "smoker's throat"—chronic catarrhal laryngitis, evidenced by some inflammatory thickening at the hinder part of the glottis. In His Majesty's fatal illness the sequence of events was embarrassment of the right heart from obstruction to the passage of blood through the lungs, dilatation of the right ventricle, and heart-failure—the action of the overladen heart being gradually stopped by increasing resistance in the lungs. For the main facts in this statement we are indebted to the *British Medical Journal*, May 14, 1910.

His Most Excellent Majesty King Edward the Seventh was born at Buckingham Palace on November 9, 1841, the second child and eldest son of Queen Victoria and His Royal Highness Albert, Prince Consort. He married, in St. George's Chapel, Windsor, on March 10, 1863, H.R.H. Princess Alexandra, eldest daughter of His Majesty King Christian IX. of Denmark, and sister of Her Imperial Majesty the Dowager

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Empress of Russia. On the death of Queen Victoria, on January 22, 1901, he succeeded to the Throne in his sixtieth year, and on August 9, 1902, he was crowned in Westminster Abbey.

Such were the outstanding events in a great career. His medical history includes a most dangerous attack of enteric fever in the early winter of the year 1871, when for many days his life hung in the balance, and an equally dangerous attack of perityphlitis in 1902, on the eve of the day fixed for his coronation. On both these critical occasions his life, under Providence, was spared in response to the most skilful medical and surgical attendance, the most careful and assiduous nursing, and the untiring devotion of his gracious Consort. Mention should be made in this connection of the serious accident which befell His late Majesty (then Prince of Wales) at Waddesdon Manor on July 18, 1898. In descending a spiral staircase, the Prince missed his footing, and the extreme effort he made to recover his balance caused a rupture of the insertion of the left quadriceps extensor muscle, which tore away with it at the same time the upper portion of the patella. The gap between the fragments amounted to a little more than two inches. This diagnosis was made as the result of a Röntgen-ray photograph. His surgical advisers on this occasion included Sir William MacCormac, an Irishman, and a native of Belfast. Before the end of November, 1898, the *Lancet* announced to the Nation the complete recovery of the Prince.

Writing as medical journalists to medical readers, it is with the relations of King Edward to Medicine, and especially to Preventive Medicine, that we are most concerned, and the remainder of this memoir will be devoted to this topic.

It was natural that one who had himself passed through a dangerous attack of enteric fever should sympathise with the sick and suffering. And so King Edward on all occasions gave expression, in thoughtful and tactful language, to the kindly sympathy he felt for those of his subjects who were in any trouble.

In August, 1891, the Seventh International Congress of Hygiene and Demography took place in London, under the patronage of Her Majesty Queen Victoria. The opening

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meeting of the Congress was held on Monday, August 10, in St. James's Hall, the President, H.R.H. the Prince of Wales, K.G., being in the chair. It was our good fortune to be present at that historic gathering of sanitarians from all parts of the British Empire and from foreign countries in both hemispheres. The Prince of Wales delivered the opening Presidential Address, in which occurred the now famous epigrammatic question—"If preventable, why not prevented?"

The following is taken from that masterly pronouncement from the standpoint of State Medicine:—

"As one looks through our programme, it is impossible not to feel distress and even horror at the multitude of dangers to health in the midst of which we have to live. Some of them appear at present to be inevitable, but the great majority may certainly, with due care, be averted. I cannot pretend to be able to judge but of a few of these dangers, but I would take as examples those to which my attention was especially drawn when I was a member of the Royal Commission on the Dwellings of the Working Classes. I learned much there of the dangers to health, which may be ascribed to the constant increase of our great manufactories and to other industries from which especially come the overcrowding of our towns, the building of huge factories, the pollutions of our atmosphere, the accumulations of refuse, the fouling of rivers, the impurities of earth, and air, and water. I learned not only these dangers, but the immense difficulty of increasing or even maintaining our activity in all branches of trade without incurring heavy risks to health, more particularly in our chief centres of population. The task of averting them might have appeared hopeless, but I have rejoiced to see how much has already been done in diminishing them, and to observe how our registers bear witness to the decreasing mortality in our large towns, to the increasing average length of life in the whole population, and to many facts proving the good influence of our sanitary institutions. But on them I do not now propose to dwell; I will only conclude from them that the good already done, and the constantly increasing knowledge of the whole subject, may make us sure that much more good may still be attained, and that neither this

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nor any other nation should be content until prosperity in business and all other things desirable for the national welfare are made consistent with national good health. How the many dangers which our programme indicates may best be dealt with will, of course, be discussed in the several Sections. It will be no trivial work if their sources and probable remedies can be clearly pointed out, and, especially if this can be done, as in a Congress such as this it should be, in a strictly scientific manner, calmly and dispassionately, without any reference to either general or municipal politics, or for any other purpose than the promotion of health. It is only on conviction such as may thus be produced that the appointed Sanitary Authorities can compel the changes necessary to be made, for such changes are almost always inconvenient or injurious to some, and might even seem unjust to them, unless it be made quite clear that they would be very beneficial to the community. But my hope is that the work of this Congress may not be limited to the influence which it may exercise on Sanitary Authorities. It will have a still better influence if it will teach all people, in all classes of society, how much every one may do for the improvement of the sanitary conditions among which he has to live. I say distinctly 'all classes,' for although the heaviest penalties of insanitary arrangements fall on the poor, who are themselves least able to prevent or bear them, yet no class is free from their dangers or sufficiently careful to avert them. Where could one find a family which has not, in some of its members, suffered from typhoid fever, or diphtheria, or others of those illnesses which are especially called 'preventable diseases?' Where is there a family in which it might not be asked—'If preventable, why not prevented?' I would add that the questions before the Congress, in which all should take personal interest, do not relate only to the prevention of death or of serious diseases, but to the maintenance of the conditions in which the greatest working power may be sustained. In this I include both mental and bodily power: for the highest possible prosperity must be when men and women of all classes, rich and poor alike, can safely do such good and useful work as they are fit for, and for which they are responsible to those among whom they live.

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To this end it is essential that they should enjoy the best possible health and vigour ; and to obtain these it is necessary that everything possible should be done for the promotion and maintenance of the National Health. Such, then, is to be your work ; let me say our work, for though I cannot further contribute to the proceedings of the Congress, I shall watch them with much interest, and shall always strive to promote whatever may be here plainly shown to be useful for the Public Health."

In no small measure due to the profound impression made on the lay mind by the Seventh International Congress of Hygiene and Demography, the crusade against Tuberculosis, as the most widespread and deadly of infectious diseases, was inaugurated in the closing decade of the nineteenth century. In this crusade from its first inception the Prince of Wales took a sympathetic and active part. While still lame from the effects of the accident to his knee-cap in 1898, His Royal Highness presided over a private meeting held at Marlborough House on Tuesday, December 20th, of that year, in support of the National Association for the Prevention of Consumption then in process of formation. He announced from the chair a gift of £20,000 from the London partners of a German Firm—Messrs. Weiner, Beit & Company—in aid of the Association, and for the special purpose of founding a sanatorium. His interest in the whole subject of tuberculosis and its prevention increased rather than abated on his accession to the Throne, and by a pathetic coincidence the third Annual Report of the King Edward VII. Sanatorium, Midhurst, Sussex, was published only a few days before His Majesty's fatal illness and death. This splendid institution, containing 101 beds for early cases of pulmonary tuberculosis, was opened by King Edward on Wednesday, June 13, 1906, Queen Alexandra also being present at the ceremony. The Sanatorium had its origin in the wish of His Majesty to found an institution in England on the lines of that at Falkenstein in the Taunus. The realisation of the project was made possible by a munificent gift of £200,000, which Sir Ernest Cassel placed at the disposal of the King for any philanthropic purpose His Majesty had in view. His Majesty laid the foundation stone on November 3, 1903, the site comprising

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151 acres on the southern slope of Easebourne Hill, about three miles from Midhurst, Sussex. The buildings stand at a height of 495 feet above the sea.

In declaring the Sanatorium open, King Edward said : " It has ever been my endeavour and that of the Queen to do all within our power to mitigate suffering and to check the ravages of disease. The Queen has shown her deep interest in the fight against tuberculosis by becoming the patron of the proposed 'Queen Alexandra Sanatorium' at Davos, and by permitting that institution to be called by her name ; and it is our earnest hope that the Sanatorium which is now opened, and its research laboratories, equipped with every resource of modern science, may assist to advance the physiological knowledge of pulmonary diseases, and that this institution may, by treating the disease in its early stages, be the means of prolonging the lives of those whose career of honourable usefulness has been interrupted by this terrible malady. I pray that God's blessing may rest upon this building, and upon all who work within it and all who come to it for aid, and that it may be a means of alleviating suffering and saving life for this and many generations to come."

The keen interest taken by our late King in the investigation into the origin and nature of Cancer is known to all. He was the sympathetic Patron of the Imperial Cancer Research Fund, of which our present Gracious King has been the illustrious President for many years.

While he was still Prince of Wales, King Edward had identified himself with the creation and development of a fund for placing the finances of the great metropolitan hospitals on a satisfactory footing. Shortly after his accession His Majesty expressed his desire that, as he continued to take a great interest in the Fund, its name should be changed from that of " The Prince of Wales's Fund for London " to that of " King Edward's Hospital Fund for London," and by the latter name this magnificent charity has ever since been known.

The Victorian Era saw the rise and development of Modern Nursing, which was one of the brightest jewels in Queen Victoria's Crown. King Edward and Queen Alexandra lost no opportunity of showing their profound and active sympathy with that beneficent movement, which has revolu-

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tionised the treatment of the sick and suffering among all classes of the community. But with the far-seeing wisdom, which was his in so marked a degree, King Edward recognised the necessity of ameliorating the lot of the nurses themselves. On the establishment of the Royal National Pension Fund for Nurses, His Majesty became its Patron, and ever afterwards displayed the most sympathetic concern in its welfare. Hundreds of nurses cherish the memory of that summer day in 1908, when the King and Queen opened the new buildings of the Fund on the Thames Embankment. To his appreciation of the nurses' calling, King Edward set his seal when in 1907 he bestowed on Florence Nightingale the Order of Merit.

Enough has been written to remind our readers of the lively interest taken in all that belonged to the welfare and health of his faithful subjects by our late Sovereign of ever-blessed memory. King Edward lost no opportunity of showing his warm appreciation of the Profession of Medicine. Its members recall with pride the fact that he did not think it beneath the dignity of the King of Great Britain and Ireland and of the British Dominions beyond the Seas, and Emperor of India, to be enrolled as an Honorary Fellow of the Royal College of Physicians of London, and of the Royal College of Surgeons of England. He was as proud to become one of us as we were to count him as an honorary member of our noble profession. In 1902 also he graciously consented to become Patron of the British Medical Association, of which he had been an Honorary Member from 1900, up to his accession.

And now we have lost him—but what is our loss compared with that of the gracious lady, who shared his joys and sorrows through forty-seven years of happy married life? To Queen Alexandra our hearts go out in deepest sympathy, praying—

“ May all love,
His love, unseen but felt, o’ershadow Thee,
The love of all Thy sons encompass Thee,
The love of all Thy daughters cherish Thee,
The love of all Thy people comfort Thee,
Till God’s love set Thee at His side again ! ”

EDWARD THE GREAT, EDWARD THE GOOD !

Vale, vale, vale !

J. W. M.

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